Adolescent's Understanding

of the Emotions of Others:

A survey of local high school students

by

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ABSTRACT

This exploratory study asks the question, 'How skilled are the adolescents of today at understanding the emotions of others'. A questionnaire was administered to 357 Christchurch High School students in Forms 3, 5 and 7. Five high schools donated their students'; time to the study. There were two public, two integrated and one private high school in the study. Five demographic dimensions were explored, namely: gender, age, Form level, income and race. The questionnaire presented 14 short scenarios, each followed by a question in the general form, 'What was the protagonist feeling and why'. Ten A Priori hypotheses were proposed and tested. The results indicate that for adolescents the general level of the emotional understanding of others is very low but that some groups performed remarkably well such as the Form 3 private girls school. The students' skill generally increased with age and Form level. Females scored significantly higher than males on all measures, namely at every age, Form level, income level, in every racial group, in the top end group and in the bottom end group. Form groups were found to be a better measure of skill growth than age groups presumably because Form groups represent clearer social groups than the age groupings. Scores by income groups showed the ability to understand the emotions of others was independent of income level. Generally Caucasians scored higher than non-Caucasians except in the top group where there was a slightly higher proportion of Polynesian / Maori and the Asian students in the group, however, the Asian group was very small. Implications for training students in the skills of understanding the emotions of others are presented.

CHAPTER ONE

INTRODUCTION

1. GENERAL INTRODUCTION

Emotions play an integral part in human experience. An important part of emotional life is making judgements about the emotions of others. Every day, most people, either consciously or unconsciously, make judgements regarding the emotional state of the people with whom they come into contact. That judgement affects how we behave toward that person at that point in time. The emotional state of any particular person at any one point in time depends upon innumerable internal and external factors both past, present and anticipated.

If a person consciously analysed even one emotional event, taking into detailed account the entirety of the biological and environmental factor's of both their own and the other person's entire life's experience, the process would consume all available mental resources, effectively stopping all other activity. Therefore, a summary of our experience is created to catalogue past experience into recognisable patterns for making quick judgements on minimal evidence. This databank is refined by both our own personal experience of similar situations and by new information about other people's experience gleaned from a multitude of external sources.

People develop different summary databanks on the emotional experience of others depending upon many factors. The person's own subjective experiences of their own emotions provides a base which is amended by more objective environmental data, both observational and written. The development of an individual's databank varies enormously depending upon the subject's interest in the subject and the nature of the environment the subject has experienced. Some people go through life with little or no awareness of either their own emotions or the emotions of others while those at the other extreme may be obsessed with little else. Still others are thrown unwillingly into emotional awareness through a bereavement, marriage separation , redundancy, accident or other major trauma.

This thesis explores how much high school students understand about the emotions of others. Emotional development during adolescence metamorphoses a child into young adult,

supposedly ready to engage in such complex activities such as marriage, child rearing, and work. How well equipped are this generation of Adolescents is an important developmental time in the human life cycle.

The present study seeks to tap the naive, folk or commonsense psychology (eg, Stitch, 1983) which reveals people's "mental lives" (James, 1890/1950). This "mental life" approach is still important, showing the words and phrases that are readily available for conscious use in inferring other people's emotions. A subject's paucity of descriptive words and phrases would indicate a lack of emotional terms and concepts, implying a poor ability to communicate understanding of other people's emotions or to act appropriately. An example of a folk psychological explanation would be: "John was annoyed because his mother would not allow him to go outside to play". Whereas a more scientific explanation might be: "John's desire to go outside was frustrated by his belief that he would be punished if he disobeyed his mother".

The development of the scenarios is discussed at length in Chapter 2 -Method. In brief, the students were given 14 short projective scenarios (Appendix 1) along with a question in the form, "*What do you think the protagonist was feeling and why?*". The questionnaire presented the scenarios along with a request for demographic information to 357 students in five Christchurch high schools. The questions aimed to portray the ten basic emotion groups as proposed by Izard (1971, 1977) plus several other emotions thought by the author to be especially relevant to interpersonal relationships.

The questionnaire collected five demographic dimensions and free form replies written by the students in their form classes. Examples of the replies are given in Appendix 1. The results were reviewed using both narrative observations and objectively scored answers. The narrative gives examples of answers that illustrate a variety of perceptions recorded by the students. The scoring gives a numerical handle for comparison of demographic profiles.

I hope that by the finish of the reading, the reader will share my anguish for the students, their future partners and children. Most of our high school students are being launched into life with hardly a clue about emotions. The prognosis for the future is frightening indeed, even if remedial action were begun immediately, which of course is impossible.

The remainder of the thesis describes this work's place in the body of psychological literature, the method used, the results obtained, a discussion of the meaning of the results along with future avenues for research and training, followed by some final conclusions. References are provided followed by appendices containing the more detailed supportive information. The

remainder of this introduction describes the aims of the study, some definitions of terms used and the rationale for the approach taken.

1-1. AIMS OF THE STUDY

The primary aim of this study was to explore the area of adolescent student understanding of the emotions of others. The study investigated both the nature of the students understanding and the demographics of the strengths and weaknesses of their understanding, and their interest in learning more about the subject.

The aim of the questionnaire was to tap the students' ability to predict and verbally report the probable emotional responses of others and to express in writing the causal logic of the predicted emotion. A secondary aim was to portray clear scenes with characters of various ages and genders interacting in a variety of ways in widely differing situations to provide access to a broad slice of the students knowledge base on the subject. The aim was to test the range and depth of unprompted, unprimed insight.

The selection of students aimed to test a variety of ages and genders in several school types, income brackets and racial origins to provide demographic diversity and to increase the chance of identifying problem as well as successful groups.

This thesis deliberately avoids the question of whether cognitions cause emotions or vice versa because the focus is on evaluating students' ability to identify the common emotional reactions to common life situations. Naturally the students attributed a variety of appraisals to the subjects in the questions, however what was measured was the breadth and depth of insight into the plausible appraisal - emotion pairs that they were able to see in the situations.

1-2. DEFINITIONS

This study explores a part of *empathy* but not the whole. Psychological study has progressed from Freudian days to the more cognitive aspect of the feelings and thoughts of others (Borke, 1971). The next decade expanded the focus of empathy research to include both affect and cognition (Hoffman, 1984) and the multi faceted thinking of Davis (1983, a, b).

Hoffman defines empathy as "cognitive awareness of another's internal states (thoughts, feelings, perceptions, intentions) and the vicarious affective response to another person". The present study is concerned only with the cognitive awareness portion of Hoffman's definition.

Davis developed an Interpersonal Reactivity Index which tested four possible dimensions to empathy, namely "perspective taking, fantasy, empathic concern, and personal distress". Davis defined perspective taking is as the cognitive skill of seeing from another's point of view. Empathic concern is defined as the affective aspect of feeling with concern. Fantasy is the cognitive and affective identity with fictitious characters and personal distress is defined as feeling the negative emotions about the other person's situation. "Empathy in the broadest sense refers to the reactions of one individual to the observed experience of another (Davis, 1983a)". The term *empathy* is used in the broad sense of Davis's definition.

Of Davis' four dimensions, *perspective taking* is the closest to the work in this study. In particular this study was concerned with two cognitive aspects of perspective taking.

First, *lexical terms* were sought to describe the predicted emotional state of the other person, that is *what* the character would feel. For example, the terms "sad" or "lonely" were sought from a grief scenario.

Second, a *causal explanation* for the emotion was sought. The student was requested to evaluate the situational cues and make causal attributions for the character in the scene, that is, *why* the character would feel this way. For example, the reasons "she misses him" or "she has lost her companion" were sought from the grief scenario.

In seeking a term to explain the work of this study, the term emotional awareness could not be used because current usage refers to one's own internal awareness of one's won emotional states. Dalkvist & Rollenhagen (1989, PLA[1]) is an example.

Building on the idea of perspective taking ability (seeing from another person's point of view), a new term is coined for the purposes of this study, namely *predictive emotional (lexical and causal) knowledge of others* or *PEK* for short. PEK is defined as "the ability of one person to predict the emotional response of and the causal attributions made by another person in a given situation". Because a questionnaire was used, the ability to put these perspectives into writing is included in that definition by default. The Method Chapter (2) examines the use of questionnaires over other methods for this type of work.

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[1]PLA = PsychLit Abstract. All references marked PLA, are based on information found in the Abstract text on PsyhLIT Database, Copyright 1991 American Psychological Assn.

The terms *subjects, respondents* and *students* refer to the participants in the sample who filled in the questionnaire, all of whom were adolescent high school students between the ages of 13 and 18 inclusive.

The term *school(s)* refers to the schools in this sample.

The term *children* refers to persons less than 12 years old.

The term *adolescents* refers to persons from ages 13 to 18 inclusive.

The term *understanding* refers to the emotional understanding of others. This is another word for perspective taking ability.

Lexical terms refers to the names of emotions.

Character refers to one or more of the persons in the 14 scenarios presented in the questionnaire.

Target character and *protagonist* refer to the character in the questionnaire about whom the 'what' and 'why' questions are being asked, for example, the grieving woman.

Support character refers to the character(s) in the questionnaire who are instrumental to the target characters emotional response, for example, the grieving woman's dead husband.

Observer refers to the student answering the questionnaire, that is, the student is the outside observer of the events portrayed in the questionnaire scenarios.

Causal attributions refers to the reasons the students give for the character feeling the way they do.

Emotion - Appraisal pair refers to the reason for the character feeling a specific emotion, for example, "she felt lonely because she had no companion".

Feeling is used interchangeably with the term *emotion.* Wellman and Bartsch (1988) explain that the generic term "feeling" can have three different meanings, namely, a desire, a physiological phenomenon, or a basic emotion. The present study used the term "feeling" as a synonym for emotion to assist the students in grasping the intent of the questionnaire. Therefore,

when scoring the questionnaire terms such as *tired* were accepted as valid feelings even though they represented a physiological state.

1-3. HYPOTHESES

An exploratory study could be non-hypothetical, however this researcher began with several beliefs about the PEK (Predictive Emotional Knowledge: the ability of one person to predict the emotional response of and the causal attributions made by another person in a given situation) of adolescents. These hypotheses were based on personal experience as a psychotherapist and counsellor seeing both adolescents and adults. Due to the focus of this study, the hypotheses are stated for adolescents only.

The A PRIORI hypotheses for this study were that for adolescents:

1) The general level of PEK is low.

2) Female PEK is greater than male PEK.

3) Younger persons have poorer PEK than older.

4)..Students from higher income families have a greater PEK than students from financially poorer families.

5) Maori and Polynesian students have a greater understanding than other ethnic groups.

6) Private school students have greater PEK than integrated schools and integrated school students have greater PEK than public school students.

7) The general interest in learning more about emotions would be low, and females would be more interested in learning more about PEK than males.

8) Streaming in schools distinguishes between levels of PEK such that 'A' streams have greater PEK than 'B' streams.

9) Emotional vocabulary scores follow the same trends as total questionnaire scores.

1-4. RATIONALE

The inspiration for this thesis came from two directions. First, I observed in my clinical practice a pervasive ignorance of what might be considered essential knowledge about emotions in numerous dimensions. Second, I observed in my previous business career that

management's interest in the emotional consequences of management decisions frequently ranged from superficial to negligible.

Upon exploring the academic research on emotions, I came across the concept of the education of the emotions (Strongman 1987). Strongman reviewed the work of Leeper (1970), Peters (1970) and Izard (1977) regarding the education of the emotions.

Leeper contends that the human species is about to embark on a third developmental age wherein we recognise that people "experience situations emotionally". Peters focuses the domain of the education of emotions on various ways to control the emotions and the moral dilemma of what to teach as "better" emotions. Izard points out the emotionally inhibiting effects of socialisation and the apparent emphasis on the dominance of the intellect.

Before education of the emotions may begin, the current knowledge base and opinions of the general public, the would be educatees, toward emotional education needs to be explored. This can be explored in several dimensions. One dimension is the knowledge of emotions experienced within the subject and a second dimension is the subject's knowledge of emotions experienced by others. Both dimensions include an understanding of past, present and future emotional reactions.

The knowledge of one's own emotions is left to other researchers, having been the focus of much research over recent years. Therefore, only the emotions of others will be addressed in this study. The questionnaire seeks to establish a picture of the current content of a typical individual's knowledge of the emotions of others and the general willingness to undertake further training in the area.

Counselling experience

In my work as a counselling psychologist, innumerable relationship and personal problems trace back to the client's lack of understanding of the emotional life of their partner, children, parents, bosses, employees and a host of other interpersonal relationships. Clients often seem to have little or no idea how their own actions or how external events affect the other party emotionally. This lack of knowledge spawns interminable arguments and discord causing unnecessary pain. A toxic developmental environment results, infecting the family for generations.

The present study explores the general level of emotional understanding adolescents have so far acquired to cope with life situations. Soon the challenges of their early adult years, such as marriage, child rearing, work, family and other interpersonal relationships, will be upon them. How well prepared are they?

Being prepared is important. Parents with little or no emotional understanding of others will likely treat their children insensitively, probably contributing to personal maladjustments by the child. Consequently, the child may adopt a variety of anti-social or ineffective behaviours. The parents may also treat their partners insensitively which may lead to broken homes and all that implies. Likewise work relationships may suffer causing unemployment, loss of job satisfaction or perhaps stifling career opportunities.

Degree of scientific effort

The large body of work that has already been done on behavioural training in communication, conflict resolution, assertiveness and social skills, attests to the need for human beings to communicate and the difficulties they have doing so. So frequently couple's attempts at communication degenerate to childish tit for tat, scoring points and ensuring the partner is hurting as much as they are. These are crude attempts to meet emotional needs. Clinicians often hear one partner complaining, "He has no idea how his actions affect me. I tell him but he just doesn't understand."

Illustrative example

How often relationship counsellors hear one partner castigating the other partner for not understanding what they are feeling. "You just don't understand how I feel! You just don't listen to my feelings. You just don't understand me. You don't act like you love me." And the response is an equally hurt blaming tirade from the other partner.

How much easier interpersonal relationships could go if everyone had a good understanding of how each other experiences life emotionally. People would feel less misunderstood, less lonely and abandoned, more sympathetic and empathetic as well as more appreciated. Or would they?

For example, a wife comes home after winning her first squash tournament. Her husband just grunts and demands dinner. She had been feeling proud and elated at her accomplishment, but now she might feel angry and unloved because he ignored her accomplishment.

Perhaps, he had never won any competition and did not know that feeling. Or, he might think that squash is a waste of time and so be disinterested. Alternatively , he might resent her success and want to punish her by denying her this moment of glory.

For what ever reason, he can use his knowledge of emotions to outwardly react to her news across a positive to negative continuum from joyful support to punishment. Venturing into moral issues about whether he would be right or wrong in his actions, would be easy at this point.

However, moral issues are not addressed here because any knowledge can be used for positive or negative reasons. Gaining the knowledge is still preferable because without the knowledge, then everyone wallows in ignorance, perpetuating awkward and painful emotional collisions with one another with no hope for fulfilling relationships. This study is interested in whether or not he knows what she would likely be feeling and not what action he takes. That is another matter.

Knowledge of the emotions of others is important. Without this knowledge, relationships have a poor prognosis. The argument could be proposed that each partner in a relationship only needs to know what questions to ask of their partner. Good questions would elicit what the other person is feeling. Unfortunately this simple solution fails if the questioning partner does not have sufficient insight to ask at an appropriate time in the first place. The results of this study show that such basic misunderstanding are rampant among adolescents today.

Vision of the future

How much happier and productive childhood is if parents have clear insight into their children's emotional life. This is particularly important because children have severe verbal restrictions on their ability to explain what and why they are feeling as they do. If the parent doesn't understand why the child is crying or why the children are arguing and hitting, then they are at a loss as to what action to take. All to often the parents employ anger to control the situation, thus adding yet another child to the mix!

Emotions can be like the curtain behind the players on the stage. The curtain gives a particular hue to all the action taking place. A child's experience of life creates an emotional backdrop to the child's future adult life. A life of joy may create a rich coloured tapestry whereas a life of pain, abuse and neglect may create a muddy brown or black backdrop. Teaching a child to be aware of how their actions affect other people is a training ground for care, consideration and

understanding in future relationships, whereas the lack of this training is a formula for cruelty, selfishness and contempt.

Emotions may also take the foreground and be the major players on the stage. When emotions are out of control, suffering usually follows. Tragedy's will continue to occur in people's lives, as will conflict. When the emotion becomes the driver of action, the person is definitely out of control. So often, the out of control emotions are borne of ignorance of how one's actions will affect another, and a viscous cycle gets started. Avoiding the viscous cycle in the first place is often the best cure. This requires insight into the emotional life of others.

Sources of knowledge and training

Such an important facet of interpersonal life as the understanding of the emotions of others is largely left to parents to teach their children. Those children whose parents do not know about the emotions of others have very little chance of learning without educational programs to teach both the children and their parents. Teachers have the opportunity to weave the learning about the emotions of others into the daily classroom incidents and material. However, if the teacher has poor understanding of the emotions of others, then the teacher will also perpetuate the ignorance and be unable to give appropriate guidance.

If substantial deficits in the emotional understanding of others can be identified, then the need for appropriate training of young adults, teachers and parents is justified, and the content of the training is implied. How that training might be administered is beyond the scope of this thesis except for some minor speculation in the Discussion Chapter (4).

The remainder of Chapter 1 is structured in three parts, namely, 1) the general place of emotions in the psychology, 2) some related empirical studies, and 3) summary conclusions from the literature. Justification for the method used is left to the Method Chapter (2).

2. EMOTIONS IN PSYCHOLOGY

The study of psychology ranges across the domains of human action, cognition, social behaviour, motivation, development, and measuring individual differences (Gleitman, 1991). Psychology's theories range across the domains of evolution, behaviour, cognitive, humanistic - phenomenological, psychoanalytic and neuropsychological (Seamon and Kendrick, 1992).

Theories of emotions range across cognitive, physiological, behavioural and experiential domains (Strongman, 1987). This implies that emotions are intimately involved in the

field of cognition (mind), physiology (body), behaviour (of all kinds, including motivation for such behaviour) and the experience of life (meaning). All of the general psychological theory categories listed by Seamon and Kendrick (above) have something to say about emotions. Emotions figure in many areas of psychological inquiry. Emotions form a central part to our experience as human beings, giving life and fire to existence.

The highly subjective nature of emotions make them difficult to objectively define, measure and predict. This poses many problems for scientific theorists, researchers and clinicians alike. Not surprisingly, the general public also has its share of problems with understanding emotions, both their own and the emotions of others.

The significance of emotions to the general public is poignantly clear in situations like marriage, divorce, child rearing, abuse, war, natural disaster, success, failure, time pressure and so on. All of these situations have indisputably significant emotional impact on both the people experiencing them and other people around them. This study looks at how well equipped our adolescents are for understanding, in their own naive way, the emotions of others. The potential impact of this ignorance reveals the importance of the understanding of other people's emotions.

3. RELATED EMPIRICAL STUDIES

A search of the literature shows that the present study is unique. The following sections explore a sampling of studies addressing eleven related areas. The review will demonstrate where this study fits into the body of scientific current psychological literature. Most current studies in the above areas of research focus on pre-schoolers and children up to the age of eleven. Some studies examined university students, but none spanned the highly formative adolescent years as the present study does.

Reviewing the research in the area of predicting the emotions of others shows a rather piecemeal approach. This approach is understandable given the difficulty involved in studying emotions in general. The research in this area is still young, therefore even very basic aspects of the search for understanding are still unsettled. Coming to grips with the area has led researchers to address many smaller aspects of the whole picture, hoping a clearer understanding emerges from the pieces. The aim of this section is to elucidate the pieces and give an idea about where current research stands today.

3-1. Identification of emotions

Several approaches have been taken to study how we identify the emotions of another person, such as facial expressions, puppet vignettes, audio tape vignettes and actors portraying gross body movements. For a review of studies on how situational aspects affect children's ability to correctly infer emotional information from the facial expressions see Gross & Ballif (1991, PLA).

Preschoolers are a popular target for research because their more rudimentary processes often reveal the foundation for more complex adult behaviour. For example, Denham & Couchoud (1990, PLA) used puppets to present vignettes portraying anger, fear, happiness and sadness to young preschoolers . This study focussed on identifying just four emotion types and valence (positive - negative).

Hortacsu & Ekinici (1992, PLA) played audio taped vignettes depicting angry happy and neutral emotions to students aged five, seven and ten. They then examined the differences in the children's use of situational and vocal cues to infer the character's emotions.

Videotapes of actors portraying a 12 categories of emotions using only gross body movements were used to explore which movements were attributed to which emotion categories(de-Meijer, 1989, PLA).

3-2. Situational knowledge

Stein & Levine (1989) studied "the causal organisation of emotional knowledge". The study was "designed to examine whether young children understand that emotions are evoked by situations that concern people's goals and values" and to determine if children "make distinctions among specific emotions similar to those of adults". Subjects aged three, six and adult "predicted and explained people's emotional responses". The responses were tape recorded for later analysis of the dimensions of knowledge, particularly goals and outcomes in terms of success and failure. Although the task was similar to the current study, their goal was to understand more about the internal organisation of the causal attributions people make rather than *what* causal attributions people make as in this thesis.

Conway & Bekerian (1987) investigated the "types of knowledge people have concerning [social] situations" and examined "how that knowledge may be represented in memory". They identified "scene information, script information and autobiographical memories" as three distinct types of situational knowledge. In addition to the three specific categories of

situational knowledge, general emotion - situational information and a conceptual knowledge of emotions were found to be involved.

3-3. Predicting emotions

Taking a cognitive organisational approach, Karniol (1986) attempted to elucidate the "transformation rules used to predict other people's thoughts and feelings". She contends that these rules are organised in a hierarchical system.. It is interesting to note how closely tied cognitions and emotions are in Karniol's study, both sharing similar transformation rule organisation.

Taking a personality approach, Gnepp and Chilamkurti (1988) found that their subjects "were more influenced by the trait formation when predicting behaviour than when predicting emotion. Understanding emotion may be more difficult in that it requires a conceptualisation of personality traits as implying thoughts and feelings, as well as behavioural dispositions". Therefore, to infer emotion requires the additional ability to "abstract from past behaviour the idea of underlying, mediating internal phenomena". In short, it is more difficult to predict emotions than behaviours. Evidence from this study shows that the present study is testing a rather complex cognitive task. However, evidence from other studies cited in this section show that this task is possible even for young children.

3-4. Types of emotion inferences

Liu et al (1992) studied undergraduates' "inferences about [multiple] causes of positive and negative emotions". They found that situation and mood inferences were more likely in the case of positive emotions about a major event and that dispositional inferences were more likely in the case of negative emotions. The current study focuses on the student's ability to make any meaningful inference rather than attempting to identify different types of inferences as did Liu et al.

3-5. Developmental view

Wells & Higgins (1989) studied *how* children aged four, five and eight years performed emotional inferences at various developmental stages using a combined Piaget - Kohlberg model to identify the stages. They deliberately avoided addressing whether specific subjects *can* make the inferences. This thesis is primarily interested in whether students *can* make meaningful inferences. The present study seeks to uncover demographic groups who can and

cannot make meaningful inferences. The present study also reveals the development rates of the emotional knowledge of others, from age 13 through age 18.

The development of the ability to understand the simultaneity of two emotions is important to the present study because higher scores would be obtained from students who could perform this task. Harter & Buddin (1987) studied "children's understanding of the simultaneity of two emotions" and developed a "five stage developmental acquisition sequence" model. Each stage reflected a qualitative change in the ability to distinguish two simultaneous emotions. In the study of ages four to twelve, the valence, the number of targets and direction of the targets were varied as shown in Table 1:

Table 1 describes a developmental continuum from no ability to recognise two simultaneous emotions through to the hardest task of differentiating two emotions of different valence being simultaneously experienced by one person. An example of Level 4 would be a child who receives a new puppy shortly after the child's dog had died. The child could be happy to receive the new puppy, while sad that the previous dog had died.

Maximum differential skills at each level

Level	Emotions	Valence	Target
0	1	either	1
1	2	same	1
2	2	same	2 different
3	2	different	2 different
4	2	different	1

Table 1. Harter and Buddin (1987)

Distinguishing simultaneous emotions

Harter and Buddin found that the ability to recognise simultaneous emotions systematically increased as the age increased, and that older children used emotional terms of greater differentiation. Also, they found that older students used more negative emotions while the younger children selected more positive ones. The fact that 12 year olds could perform at Level 4, reinforces the idea that the questionnaire used was within the developmental capabilities of the adolescent age group, and that giving points for recognising two or more simultaneous emotions was justified. See also Method (Chapter 2) for scoring strategies.

Thompson (1987) studied the "development of children's inferences of the emotions of others". This study sought to determine whether, as children aged, their judgement of other people's emotions is affected more by causal attributions and less by outcomes or the reverse. Students aged seven, ten and college age were asked to name the emotion and the reason for that emotion from hearing 12 stories varied systematically by situational domain (achievement or

moral), outcome (valence) and causal attribution (personal effort, another's intervention or luck). Thompson found that causal attribution inferences increased with age.

Harris et al (1987) studied "children's knowledge of situations that provoke emotion". "Children ages 5, 7, 10 and 14 years were presented with a list of 20 terms and asked to specify what situation would be likely to provoke each emotion." This is the reverse of the present study where in students are asked to specify the emotion terms and the reason for that emotion term, given a situation.

Harris et al used emotion terms which was a departure from earlier studies using facial expressions (Borke, 1971, 1973, among others, cited in Harris). Harris et al proposed that the more complex emotions go beyond what can be readily observed in facial expressions. For example, differentiation between proud and happy or between disappointed and sad relies on situational knowledge.

Expressing more complex emotions requires more precise lexical terms. Harris et al tested the accuracy of the student's knowledge of situations that would provoke the particular emotion. To factor out the student's lack of knowledge of the precise lexical terms, Harris et al used cluster analysis. They focussed on the relationships of terms rather than the precise terms .

The present study examines somewhat older students aged 13 through 18. In the present study, understanding of more complex emotions was measured because adolescents are well into Piaget's concrete operational stage (age 7 to 11 years) and might, if ever they are capable, be several years into the formal operational stage (age 11 onward). The formal operational stage "enables the adolescent to think rationally, hypothetico - deductively and thoroughly about even such remote abstraction as friction and momentum" (Peterson, 1989). Clearly such abilities would assist in perspective taking.

However, students at the concrete operational stage are limited to a "rational and consistent understanding of tangible objects and events" (Peterson, 1989). Student's stuck in the concrete operational stage of development would understandably have more difficulty making the connections between another person's emotion and its situational cause, and particularly with the case of multiple simultaneous emotions. Making these connections requires more abstraction including inference and other complex cognitive tasks such as perspective taking. Therefore knowledge of precise lexical terms would be helpful to express the more complex emotions. The students ability to use lexical terms, either singly or multiply, is therefore an important measure of the student's ability (or inability) to communicate emotional insight. .

Can a concrete operationally limited person do perspective taking and emotional inference? Yes, they can. Harris et al (above) showed that age 5 to 14 year olds can learn emotional terms representing complex emotions beyond those which can be distinguished by facial expression. Harris et al also showed that this learning occurs abruptly with word meanings mapped onto exemplars.

As shown above, sufficient cognitive skill to learn perspective taking and emotional inference is ordinarily present by or before age 14. Since this is younger than most of the sample group of adolescents aged 13 to 18 year old, some grounds are therefore established for assuming that the sample members had the cognitive ability to learn perspective taking in the sense of this thesis. So, if the sample students in the present study don't answer the questions meaningfully, then they are either short on experience or they do not want to respond..

3-6. What children can do.

Gnepp (1987) studied young school aged "children's use of situational information to infer emotion" to ascertain whether children *can* recognise an emotionally equivocal situation, that is, where two or more plausible emotional reactions exist depending on unstated factors, and whether children *can* consider more than one emotion in their inference. She found that most children, increasingly so with age, can recognise a situation where more information would be required to make an unequivocal judgement about the emotional response of the protagonist.

Gnepp (1987) also found that most children, increasingly so with age, can consider more than one emotion in their inference but often they don't, that is, they stop after grasping one possibility. (See Discussion - Chapter 4)

The possibility that students can but don't specify the fullness of the situations has several implications in everyday life. First, incomplete communications may leave the target feeling only partly appreciated, having been summarily dismissed with a single attempt at empathic communication. Second, observers acting on partial information may proceed toward inappropriate action 'without thinking', thus creating further distress. Third, observers may be unable to communicate empathically due to a lack of terminology or scripts. In any case, room is left for incorrect assumptions about, or only partial appreciation of, the target person's feelings. If this happens often enough, then the observer could easily write off the target as confused and not knowing what they are talking about when in fact the observer is confused! Couples presenting themselves in my office frequently present with this particular problem.

Gnepp (1987) reviewed several studies in which she and others studied early school age children. A summary and cited references follow. Deutsch (1974), Gnepp (1983) and Gove & Keating (1979) all showed that "by early school age, children can explain other people's feelings by reference to their probable appraisal of the situation". Gnepp et al (1982) showed that early school age children "can predict another individual's emotional reaction to a situation". Gnepp (1985) and Gould (1984) showed that in an emotionally equivocal situation a child will seek further information such as the target's appraisal or by watching the target's behaviour. Gnepp (1987) further cites numerous studies supporting the following four *can do's* for young children:

1) Children can use situational information from simple and familiar situations to judge people's emotions from as young as 4 years of age (Barden et al, 1980; Borke, 1971; Gnepp, 1983; Gnepp, Klayman & Trabasso, 1982; Reichenbach & Masters, 1983).

2) Children are sensitive to discrepancies between facial expressions and the emotion that would be commonly be expected (Gnepp, 1983; Gove & Keating, 1979; Iannotti, 1978; Kurdek & Rodgon, 1975; Reichenbach & Masters, 1983; Urberg & Docherty, 1976).

3) Children can infer the target person's appraisals of a situation from that person's verbal explanations (Deutsch, 1974).

4) Children can infer that the target person will have an unusual emotional reaction from knowledge of the target person's behavioural disposition (Gnepp et al, 1982).

The above results do not imply that children are adept at, or are willing to use, these skills.

Pre schoolers can use contextual information when making emotional judgements (Fabes et al, 1988). Thus the adolescents in the present study would have had more than eight years of continued development in using contextual information in making emotional judgements. Fabes et al. found that there were few sex differences in their sample. Even though male and female children are given to notable differences in behavioural emotional expression (Frodi, Macaulay & Thome, 1977; Cole, 1986, both cited in Fabes), the children's verbal reasoning about emotions seems independent of gender. See Results (Chapter 3) and Discussion (Chapter 4) for gender differences observed in the present study.

3-7. Affective scripts

Inferences regarding others' affective experiences may be drawn from affective scripts. The scripts store the knowledge in contextual form, from which inference can be drawn for predictions (Hoffman, 1982). These scripts consist of culturally based relationship links "among situations, appraisals and emotions" (Gordon, 1989; Lewis, 1989; Russell, 1989). The culture defines the meanings of situations in terms of "how important, dangerous, or amusing" the situations are taken to be (Gnepp & Klayman, 1992). See Discussion (Chapter 4).

In the present study, the questionnaire scenarios are scenes representing common situations. The questionnaire tests three factors, namely, 1) the presence of affective scripts in the students' memory, 2) the student's ability to generalise from their scripts to the given situation and 3) the student's ability to make meaningful inferences from the scripts about a) the emotional state of the target and b) the reasons for the target's emotional response.

This raises the question of whether emotional perspective taking ability is another way of looking at the ability to infer from one's own collection of affective scripts. If this were true then the solution to assisting students to improve poor perspective taking ability would be to teach them a quantifiable collection of normative emotional - cognitive scripts for a variety of situations involving prevalent socio-economic classes and cultures. The feedback sessions with the students, after the questionnaire was filled in, were given to reward their participation with clarification, expansion and perhaps affirmation of their script knowledge.

3-8. Developing scripts and perspective taking abilities

The development of perspective taking ability has been shown to derive more from social experience than just pure cognitive development. Perspective taking skills were found to be impaired in a group of eight year olds who were judged to have limited social experience (LeMare & Rubin, 1987, cited in Gnepp, 1989). A positive "relationship between social competence and the ability to make personalised inferences" was found by Gnepp (1989). These results imply that social - cognitive skill training in perspective taking could be useful in programs for normal and for socially impaired children. The present study highlights demographic groups which are most in need of training, and explores the development of perspective taking skills over time.

Social experience is therefore important in the development of perspective taking ability. Feedback after a prediction, revises the prediction and thereby "improves" the quality of the stored script. The more social experience one has, the more *opportunity* for feedback occurs, thus providing more opportunity for script revision. However, there is no requirement for the

person predicting the situation to seek further feedback from the protagonist and even if the feedback is sought or thrust upon the person, there is still no requirement that the person learn from the experience. The experience could be discounted, distorted or forgotten.

Also, some persons' explanations of their feelings may inadequately portray the true internal reality they experienced due to a lack of verbal skills or an unwillingness to reveal personal attributions. For example, if the reason that a boy shows anger is that he is afraid to show his fear, then the observer would conclude that the target gets angry when in fact the target is fearful. This will be reinforced by the target's behavioural and verbal actions in the target's attempt to cover up. So unless the situation is examined very carefully, the attribution may be quite simplistic and at a deeper level may be completely wrong.

A graphic example of this is a young boy, age 3 years 9 months, who would hit his father when the father returned home on the weekend from being away for the week. The father attributed this to poor parenting from the mother whom he contended did not know how to handle the boy. In part he believed that she was too lax. Therefore in the father's view, the boy was hitting because the boy was naughty and undisciplined, and not because he was hurt and angry.

The father tried disciplining and telling the boy if the boy did not behave then the boy would have to go away and be by himself. Thus the father rejected the boy. This ,of course, further hurt the boy, because the father's absence was already seen by the boy to be a rejection of him. The boy retaliated with greater fury which the father attributed to wilfulness and insubordination. His father's escalating rejection confirmed the boy's hypothesis that the father went away so much because he did not like the boy.

At this point both father and boy have distorted cognitive appraisals of the emotions of each other. When it was pointed out to the father that the boy was angry because the father was absent and that this made the boy (in a household with four females) feel unloved and out of place, the father was able to modify his attributions about the boy's anger and start spending some time with the boy and affirming the boy's worth as a male, as a son, and as a member of the family.

The boy was told that the father's going away had nothing to do with the father's love for him and that he had to do this to get food and clothing for him and the family. The boy then stopped hitting the father and their relationships improved considerably. The solution was correcting the erroneous emotional attributions and helping both parties to take a more accurate perspective of the other's situation.

This rather complex example serves to demonstrate the need for training adolescents, in other words, the parents of the near future, in developing accurate and insightful scripts and lexical language from which to infer what their children's behaviour means. Some will learn this from their parents and peers, others will learn from parenting books later and many will never learn at all.

Learning from parents may be only a perpetuation of their ignorance. Learning from peers is useful but limited by the ignorance of life experiences at their parent's developmental level. Learning from adults who have studied the subject must increase the likelihood of learning useful, accurate scripts and lexical terms as well as the skill of voluntarily applying this knowledge in a perspective taking situation.

3-9. Personal history information

Personal history information is the other person's historical (life) experiences which if known, alters the judgement made about the emotion and reasoning for that emotion that the other person may be experiencing. In order to make use of personal history information the observer must set aside both the script appraisal and appraisals based on personal experience to be able to examine the effects of the target's personal experience's with the situation (Chandler & Greenspan, 1972; Flavell et al, 1968).

For example, two people who like dogs see a movie where a well groomed Collie dog comes onto the screen. The first person has never owned a dog and the second person owned a Collie that had recently been killed in a car accident. Clearly, the non-dog owner would likely have a positive response along the lines, "What a beautiful dog", whereas the second dog owner would likely feel sad at being reminded of the beloved dog's death. The fact of the recent bereavement is crucial in predicting the emotional response to a normally positive stimulus.

Gnepp (1989) studied the ability of children to take into account personal factors relating to the protagonist. Gnepp asked children *what* the target was feeling, *why* the target were experiencing that feeling and what the target was thinking. Her purpose in this was to explore the "component processes and correlates of personalised inferences of emotions and appraisals". As in previous similar studies in the area by a variety of researchers mentioned above, the target emotions were exceedingly simple, such as happy and sad in situations familiar to the child.

The personal factors Gnepp studied included "demographic factors such as age and gender, normative factors such as social group membership, dispositional or personality factors, or

unique events in the individual's past". These factors would have changed the observer's perception had the perception been based solely on the situational evidence.

Children have been shown to base their observation of situation - emotion links based on their own personal experience with emotions as well as observing the emotions of others (Strayer, 1986; Dunn & Kendrick, 1982, cited in Strayer). When explaining the emotions of others, children 's use of interpersonal and achievement explanations increased with age. Their use of "fantasy contexts decreased with age" and boys used less interpersonal explanations than did girls (Strayer, 1986).

The present study aims to test the students' depth and breadth of insight instead of the specific component process of that insight. The scenarios were designed to give demographic and situational factors. However, the scenarios did not include dispositional or normative factors because brevity of the scenarios was important. See Chapter 2, Methods for more on the design of the questionnaire.

3-10. Empathic accuracy

Empathic accuracy is an emerging field of study and is aligned with the present study. Empathic accuracy is defined as the "ability to accurately infer the specific content of another person's thoughts and feelings" (Ickes, 1993). This follows on as a fourth level of the study of dispositional judgments after 1) personality trait judgment, 2) inferences about a partner's meta-perspectives such as "attitudes, values and self-conceptions" and 3) affective sensitivity which is "inferring the emotional state(s) of one or more target persons". Ickes observed that study in this area has progressed from the most stable personality area, namely traits, to the less stable metapespectives, to short term affective sensitivity and finally to highly transient empathic accuracy. Although the area of affective sensitivity may appear to be most similar to the present study, the affective sensitivity work has focussed on interpreting expressive behaviours (Costanzo & Archer, 1989, cited in Ickes), inferring emotion from facial expression (Ekman & Friesen, 1975, cited in Ickes) and nonverbal cues (Hall, 1978; Noller, 1980 & Rosenthal et al., 1979, all cited in Ickes).

The present study lies somewhere between the affective sensitivity work and the empathic accuracy work. The empathic accuracy work is on very immediate judgments of live persons over an extended time period and uses feedback from the target persons to validate the accuracy of the observer's empathic judgements. Ickes is studying "on-line" empathy whereas the present study seeks more to tap 1) the students' hypothetico - perspective taking ability using affective scripts, and 2) their store of personal and vicarious experiences for making judgements

with minimal situational cues. The present study tests the knowledge base that adolescents bring to the empathic situation. The knowledge base is the foundation for incorporating individual differences such as personal history, dispositions and personality traits into the final inference. From this knowledge base the observer can recognise multiple causality, equivocal situations and simultaneity of multiple emotions

Can empathy be learned? There is some empirical evidence in the work of Galanos & Cohen (1993, PLA) who concluded that their 'Ageing Game' simulation experience increased the empathy of medical students for patients who were frail and elderly.

3-11. Experimental analysis of emotions

Much work has been done on the experimental analysis of emotions. "Emphasis has been placed on research dealing with the expression, recognition, and development of emotional signals (eg Ekman, 1973, 1982; Ekman & Friesen, 1975; Izard, 1977)" (cited in Dore & Kirouac, 1985). Izard (1977) postulated universal fundamental emotions. Work is now extended to the causes of these emotions. Dore & Kirouac (1985) "showed a general agreement on the emotion - eliciting value of the verbal description of a situation". This lends credibility to the present study's use of a written questionnaire. Interestingly, Dore & Kirouac found no sex differences in their subjects' ability to recognise emotions from written situations.

4. CONCLUSIONS FROM THE LITERATURE

The literature in the area of understanding the emotions of others shows a great diversity. This is not surprising since understanding the emotions of others is a broad term encompassing a multitude of psychological processes. As in all psychological study, there are many levels of understanding of any process, from the most gross to the most detailed. At the gross level a person says, "He's upset", while at the detailed level the psychologist is concerned with how did he actually come to that conclusion, in all its component processes.

There seems to be agreement that inferences must be made to make a judgement about the emotions of others and that these inferences are based on many factors. A partial list of these factors has been complied in Table 2. The purpose of this list is to demonstrate some of the diversity of skills and knowledge required to make a meaningful judgement. All of the items in the list were discussed in the empirical review of the related literature given above.

In spite of the long list of skills and knowledge items, children seem to be able to infer the emotions of others in a crude way. The ability to recognise to opposing simultaneous emotions in one person at one time has been shown to be available to most children before puberty. This gives hope to the idea that although inferring the emotions of others is a very complex process, the process seems to be within the range of normal human capacity to perform.

The gathering of data by an individual is a lifelong process. Data on the emotions of others come from observing others which requires social experience. Social experience is available today from not just personal involvement but also from a multitude of vicarious sources such as television, radio, newspapers, magazines, books, video games and teachers.

The child of today is bombarded with information on the activities of others, but is often not given the internal emotional and cognitive data of the of the people involved. A classic example is the Indiana Jones movies where the hero is repeatedly critically injured, yet gets up to carry on with little more than a shrug. Would that we all were so detached from pain, loss and near death experiences.

The effect of the importance humans attribute to attachment to a cultural scripts is noticeable with the rise of ethnic wars and legal action. Affective scripts contain not only cultural scripts, but also situations, appraisals, emotions, definitions of self, humour, personality, values and terminology. Empathic accuracy requires assessing personality, meta-perspectives such as values and self concepts, affective sensitivity and on-line assessment of the probable thoughts and feelings of another person.

Obviously, the more cognitive skills a person has, the greater the capacity for utilising more knowledge in making judgements. However, the person must also have an interest in the subject and a willingness to acquire the knowledge and use the skills.

A person with poor cognitive development may spend a lot of time discussing feelings with other people and thereby expand their knowledge base. From their experience they can easily see what is "going on" for the other person based on their knowledge of that person's personal history, disposition, culture, personality and previously observed affective scripts.

Frequently on my office I speak with troubled couples. Some partners have amazing cognitive abilities to understand computers, electronics or law, but may have spent little or no time directing this cognitive gift toward understanding the emotions of others. The partner still says the same thing as the partner of the street cleaner, "My partner just does not understand what I am feeling. My partner is not interested in my feelings and just tells me to pull myself together."

Most of the research in this area has focussed on individual processes such as those listed in Table 2. The present study starts at the end product, that is, the verbal expression of the prediction made. The study attempts to highlight demographic differences in the skill and knowledge bases of the sample population and asks how well can the students perform inference and perspective taking when attempting the understand the emotions of others.

The sample contains all adolescents which is unique. This sample population should be considerably more cognitively advanced than the samples of preschool and primary school children used in most of the studies in this area of research. Poised on the thresh hold of adulthood and in the middle of a rapid developmental stage, adolescents provide a window into the patterns in the development of the understanding of the emotions of others. Many will leave school between age 16 and 18 so will start their adult life with only the skills they take with them at the time the sample was taken.

How much development of these skills will take place after adolescents is still unknown. Undoubtedly parenting, work, and the death of parents are a few of the powerful emotional experiences that shape our understanding of the emotions of others. These experiences provide new data for the ever expanding script knowledge.

As shown, understanding the emotion's of others requires a variety of skills and experience. The integration of these skills knowledge and action leads to meaningful understanding of other people's emotions.

Skills:	Knowledge
Perspective taking	Cultural scripts
Recognising individual differences	Dispositions
Evaluation of items in knowledge base	Personal history
Recognising emotionally equivocal situations	Personality traits
Observing body language	Facial expressions
Behavioural inferences	Gross body movements
Getting feedback	Actions
Social skills	Behavioural cues; eg crying
Ability to generalise	Vocal cues
Ability to analyse	Gestures
Identification of the types of emotion	Social experience
Identification of the valence of the emotion	Books,
Lexical skills	School
General verbal expressive ability and willingness	From other persons
Identification of goals in protagonist	Goals
Identification of values in protagonist	Values
Recognising multiple causality	Types of causal attributions
Recognising simultaneity of two emotions	Affective scripts
Using causal attribution info	Personal experience
Using outcome info	Scene information
Use contextual information	Appraisals
Inference skills	Emotions
Empathic accuracy	Normative information

Table 2. Information and skills required to make inferences about the emotions and reasons for the emotions in other people

CHAPTER TWO

METHOD

A survey of high school students was used to obtain a measure of their understanding of other people's emotions. This survey was then scored with points awarded for plausible answers. The data was then analysed in a variety of combinations to uncover the strengths and weaknesses in their understanding of the emotions of others. This chapter reviews the questionnaire design process, scoring, administration and the profile of the schools participating in the study.

1. DESIGNING THE QUESTIONNAIRE

Design is naturally an iterative process. Therefore, although this section describes the decision making process as linear, areas of decision were revisited numerous times in producing the finished product. Two basic options were considered, namely verbal reports and written questionnaire. Each is discussed in turn.

Verbal reports, either audio taped, video taped or interviewer notes were considered. As tempting as these information rich options were, they all shared the same problem of restricting the sample size. Since the purpose of the study was to identify population differences in understanding the emotions of others, these options were not viable in the allotted time.

Written questionnaires were seen to be more suitable for a larger sample size, being more economical on the researcher's time and resources. First, the method of administration had to be decided, then the general form of the questionnaire could be considered.

The remainder of this section has five main segments, namely the administration options, design options, the design objectives, scoring responses, scenario design, administering the questionnaire, and subjects.

2. ADMINISTRATION OPTIONS

Administration options considered included a mail out, requesting volunteers to come forward, and classroom administration. The mail out option has the distinct advantage of rapid administration and population randominity. However, the mail out provides poor control over the respondent which is important in this study. The mail out responses might well be a collaborative process with other people, or the respondent may take a disproportionately long time to formulate replies, and more likely respondents without knowledge of the research area may fail to return the form. The failure to return would be particularly true considering the hypothesis that a substantial number of subjects will have poor knowledge of the research area or even an active rejection of the subject matter. This study is different from an opinion poll where there are no right or wrong answers. In this study, the lack of knowledge could be a source of embarrassment, thus possibly inhibiting the return of the questionnaire.

Requesting volunteers to come forward also suffers from the same sample size problem as the verbal reports, and the selectivity problem of the mail out. Asking subjects to come forward to study emotions could easily de-select for those who are ignorant of, disinterested in, or actively avoid anything to do with emotions.

Classroom administration provides many advantages to this study. The classroom setting achieves a very high response rate, simultaneous administration of up to 30 questionnaires, minimal collaborative responses and a set duration to fill in the questionnaire. On the negative side, peer pressure in the class room may inhibit responses and the ethics of compulsory activity is of concern. Peer pressure was partly compensated for by separating student's desks into individual rather than group units while cross-communication was minimised by close monitoring and retrieving finished papers as soon as they were completed. In the Maori whanau class, it was impossible to stop collaboration which seemed to be an important part of that class.

The ethics of compulsion was addressed by asking the school principal's for permission "in loco parentis", and by allowing students the choice of participation or doing regular school work. Appendix 1 Administrator's notes, shows the text of the preamble to students. Only one student chose the school work option, however his choice was over-ridden by the teacher. Most students were eager to have their views sought, to learn about emotions and to experience a change from regular school work. This was encouraging.

3. DESIGN OPTIONS

Having decided to use a written questionnaire, the next decision required choosing the general form of the questionnaire. Likert scales, multiple choice, questions about personal experiences and short projective scenarios were considered.

Both Likert scales and multiple choice formats have the advantages of quick administration and objective scoring as well as familiarity for the students. The main disadvantage of these formats resides in the restriction on the type of questions that can be asked and therefore the information gained in the field of emotions. For example, given the desire to explore the understanding of the emotions of others, a Likert format generates questions such as: "How often are you aware of another person's feelings of sadness: never---sometimes---frequently". These self ratings are inherently flawed in this line of research because the self ratings require the respondent to be aware of how much the respondent is unaware of other people's feelings.

Multiple choice is a slightly better option. Short scenarios can be given, followed by a choice of which emotion the protagonist of the scenario might be experiencing. While the statistical probability of a lucky guess can be factored out, the answer choices give the vocabulary to the student which may serve as a prompt for answering later questions. Furthermore, the result is devoid of information about the logic used by the student, which may have been erroneous or not conscious.

Questions about personal experiences require the respondent to both recall and reveal events which they may not wish to, or of which they were only dimly aware. This seemed too hard for respondents.

Finally, short projective scenarios were considered. The scenarios provided information about a situation, thus removing the task of recalling specific personal experiences. Projective scenarios also focussed the subjects on the same limited number of situations thus facilitating the comparison of answers. The scenarios provided the freedom to express their own view while maintaining control on the amount and type of information gathered. By asking for the specific word or words to name the emotion, a measure of spontaneous emotive vocabulary was gained. By further asking for the reasons why the particular emotion(s) were being experienced by the scenario's protagonist, a measure of the depth of understanding was gained. The reasons given provided a cross check for the scorer to recognise possibilities seen by the subject but not anticipated by the researcher. This cross check proved so valuable that the first 50 questionnaires scored had to be rescored in light of the scorer's expanding awareness of plausible answers. In balance, short answer scenarios seeking emotional vocabulary and the subject's logic in arriving at the choice of noun seemed a solid place to start for an exploratory study.

4. DESIGN OBJECTIVES

Having settled on the general form of short projective scenarios and asking for emotion vocabulary with accompanying logic, the next task was to develop a set of objectives

to ensure the detail design was as useful as possible. The Handbook on Survey Procedures (1981) was used as a general guide. Only the major points will be reviewed in this section

4-1. Reading level

The reading difficulty of the instructions and the questions, needed to be easily comprehended by the least verbally advanced group participating in this study, which was Form 3, aged 13 yrs. Analysis of the readability of the scenarios was performed using the Microsoft Word processor. Table 3 shows the questionnaire to be categorised as *easy* on a seven point scale from *very easy* to *very difficult.* A comparison with an early draft of the literature section of this thesis is shown for comparison.

A Flesch Grade level of 6.4 means that the questionnaire can be understood by the average 6th grader in America who is approximately 11.4 years old. The Flesch - Kincaid grade level of 4.6 indicates that the questionnaire would be readily understood by students approximately 9.6 years old. Thus the wording of the questionnaire should have been very easily understood by the 13 through 18 year olds surveyed. The 13 year old would have had to have had a 3.5 year reading deficit to have had any difficulties with the wording.

	Questionnaire		Literature section		
Category	**Score**	**Reading ease**	**Score**	**Reading ease**	**Scale**
Reading ease	85.6	easy	37.7	difficult	0-100
Flesch grade level	6.4	fairly easy	14.8	difficult	4-16
Flesch - Kincaid grade level	4.6	very easy	13.2	difficult	
Gunning Fog Index	6.3	easy	16	difficult	

Table 3. Comparative reading ease of the questionnaire and the draft literature section of this document.

4-2. Time to complete

The goal was to have all students complete the questionnaire in an average time of 20 minutes, which equalled one half of a class period. This left 10 minutes for an introduction, settling the class and teacher announcements at the beginning, and 10-15 minutes for discussion afterwards as a feedback/participation reward to enhance the possibilities that some learning would occur. This goal was met. Interestingly, all Form levels took about the same time to complete the questionnaire though the older students generally gave more information in that time.

4-3. Scenario variety

The questionnaire sought to provide a balanced variety of protagonists of different ages and gender experiencing different situations. This provided for broader analysis of the students understanding of others who are either younger, older or are peers. The scores would then more accurately reflect the students preparedness for adult life and as future parents.

4-4. Universal human situations

To be a fair test in a multicultural society, the situations needed to be within the normal experience of all cultures. Therefore the scenario descriptions were very short and behavioural in nature. Delightfully, there were some students who had no idea what it would be like to be screamed at and threatened by a father.

4-5. Range of emotions

The aim was to test the subjects' range of understanding of other people's emotions. Therefore, Izard's (1977) ten fundamental emotions (see Table 4), were used in ten questions (one in each question). Four additional questions were added, one each for four specific emotions of particular interest to this researcher, namely: Pride, Love, Jealousy, Boredom. The latter four emotions could be subsumed under some of Izard's ten groups, however the added emotions frequently reoccur in my private clinical practice as problem areas for clients, hence the particular interest to this researcher.

1. Interest, Excitement or Curiosity
2. Enjoyment, Joy or Happiness
3. Surprise, Startle or Astonishment
4. Distress, Anguish or Sadness
5. Disgust, Contempt or Revulsion
6. Anger, Fury or Rage
7. Shame, Humiliation or Guilt
8. Fear, Terror or Panic
9. Contempt or Scorn
10. Guilt

Table 4. Ten primary emotions (Izard, 1977)

4-6. Qualitative data

Revealing qualitative data was sought due to the exploratory nature of the study. The free form answer style provides extra information. The Discussion (Chapter 4) contains an discussion on this mine of information. There were some very creative answers and unusual insights.

4-7. Quantifiable data

Quantifying short answer prose is inherently tricky, yet was very important for demographic analyses. The study sought to quantify the subjects emotional vocabulary and the

quality of the logic of each subject's thinking, thereby providing data for statistical analysis. A later section describes the details of the scoring method.

4-8. Exploratory purpose

The questionnaire was to be for a one off study rather than to become a standardised instrument, therefore the test / retest reliability was not analysed.

4-9. Verbal ability test

The questionnaire was intended to be a test of the subject's ability to verbalise their understanding of the emotions of others. The verbalising skill was deemed important because in human relationships, the lack of ability to verbalise one's understanding of another's emotional experience, is a serious barrier to intimate communication. While it is arguable that understanding can transcend verbalisation, and be demonstrated by other non verbal behaviours, being able to verbalise with statements such as: "I understand that my action irritates/frustrates you", or "I understand that you are feeling sad and lonely because you are grieving for your ex-husband", carry enormous impact to the other person. A common complaint of partners in intimate relationships is: "You don't understand what I am feeling!" and this can sometimes be interpreted as: "You don't care about me!".

It could be argued that we do not need to identify another's emotions as we are all capable of asking a question of the other person to determine what that person might be feeling. However, a certain level of verbal ability is required before communicating on any subject, and a knowledge of emotions is therefore necessary before any dialogue on this subject is initiated. The other party may not have the vocabulary to respond in an informative manner and misunderstandings occur. The understanding of the emotions of others allows the subject to predict probable outcomes of future or imminent events, and take preventative action by modifying their own behaviour or the situation.

4-10. Ethical

To meet ethical standards the questionnaire needed to ensure confidentiality, voluntary participation, use non-sexist, non racist language, state researcher bias and gain approval by the University Ethics Committee. To ensure confidentiality, several actions were taken. Students were told specifically NOT to put their names on the paper, only a code for the school and Form level. The papers were collected randomly from the group, placing them face down in the collection box. The completed questionnaires were stored in a locked office and the raw data scores were kept on access restricted data files.

Voluntary participation was discussed at the end of the administrative options section above. In summary the principal's written permission was gained and students were given the option of choosing school work or filling in the questionnaire.

Non-sexist language was achieved by keeping to general human situations and by not assuming, for example the female athletic achiever in question 7, stereotype roles. Gender balance was achieved by using 6 female, 6 male and 2 unspecified gender protagonists. Age balance was achieved with 5 older, 4 younger and 5 peer protagonists. Racial balance in the scenarios was preserved by choosing racially generic situations, that is, universal human experiences.

Researcher bias may have arisen from being European, white, male, married into multi racial family and a counsellor by profession. All care and attention was made to overcome these potential distortions.

Approval from the University Ethics Committee was granted.

4-11. Hold interest to completion

To achieve good participation, interesting scenarios were used to bolster intrinsic motivation. Extrinsic motivation to complete the questionnaire was enhanced by both the teacher's direction to do complete the questionnaire and by this researcher offering group discussion of their thoughts after completing the questionnaire, thereby providing an opportunity for peer and researcher / administrator's approval.

4-12. Adequate demographic data

Since this was an exploratory study, only simple demographics, namely Gender, Age, Income, Form number and Race were requested. See also section on Subjects and on Coding Responses below.

4-13. Assess interest in the subject

Interest in the subject would be an indicator of the student's receptivity toward training or education in the research area.

5. SCORING QUESTIONNAIRE RESPONSES

Scoring and coding the questionnaire responses is intimately bound with good questionnaire design. Scoring is the link between the prose response and the quantitative analysis. Without a meaningful scoring system then only a qualitative analysis is possible. In

particular, the scenarios must be clear enough to generate meaningful responses. The numerical scoring gives a more objective means for comparing the responses across demographic groups, and for exploring the relationships between the groups. Appendix 1 summarises the points awarded for each response type while the remainder of this section details the decision rules for scoring. See also Appendix 2 for several scored questionnaires.

A broad band approach was taken for the scoring of the present study because the language of emotion is full of "quasi-synonyms" (Reisenzein & Hofmann, 1993). Individuals often use the same descriptive words to represent substantially different emotional states and a single event can evoke multiple emotions. Therefore, in order to obtain a meaningful score, quasi-synonyms and emotions were given points. See Section 5-2 below.

This section first considers who scores the responses. Next, the scoring philosophy is given for 1) the naming of emotions, 2) the reasoning behind the emotions given and 3) measuring the vocabulary size.

5-1. The Coder

Although multiple coders could have provided more objectivity, the essential coding was done by the researcher, primarily for expediency as there were over 5000 items in total (357 students x 14 scenarios). An assistant was used to count the vocabulary and add the total scores, however the scores for the appropriateness of the emotions and logic was performed by the researcher. To assist with objectivity and to enhance consistency across papers, a scoring key was created as a reference. This key is included in Appendix 1. A more detailed exposition on the contents of the key is given below.

5-2. Scenario scoring: Naming the Emotion.

For each scenario the subjects were asked to name the probable emotion the protagonist would be feeling in that situation. Each scenario was tailored to have one particular emotion group a reasonably obvious choice to a knowledgeable reader. To make the scoring more objective and consistent, a table of preferred and plausible emotions was created for each question. The preferred list contains the intended emotion names and their common synonyms which demonstrate a good understanding of the emotional dynamics of the scenario. For example, the fear question (number 11) has fear, terror, panic and scared on the preferred list.

The plausible list contains emotion names and common synonyms which demonstrate only some understanding of the emotional dynamics of the scenario. For example, the fear question (number 11) has confused and excited on the plausible list. The plausible list

is moderately dependant on the reasons given as will be shown in the section on reasons for the emotion which follows.

The subject's naming of the emotion was scored using the following decision rules.

1) If the subject wrote down any one of the emotions on the preferred list, then two points were awarded.
2) If the subject did not write down any one of the words on the preferred list, and did write down any of one of the words on the plausible list then one point was awarded.
3) If either Rule 1 or Rule 2 was met then each additional word oneither list was awarded an additional point.

Table 1 shows some scoring examples for the fear question, (11)

Example	Answer	Score	Rule Invoked	List
1	Fear	2	1	Preferred
2	Confused	1	2	Plausible
3	Fear, Panic	2+1 = 3	1, 3	Preferred
4	Fear, Confused	2+1 = 3	1, 3	Both
5	Fear, Confused, Panic	2+1+1 = 4	1, 3, 3	Both
6	Confused, Excited	1+1 = 2	2, 3	Plausible

Table 5. Example of scoring rules for emotion names given
Preferred list = Fear, Terror, Panic, Scared
Plausible list = Confused, Excited

Notes: Upset was never acceptable since it was too vague. Spelling was not a scoring factor, thus "faer, terrer" scored the same as "fear, terror". See Appendix 1 for all acceptable answers.

5-3. Scenario scoring: Reasons for the emotion

For each scenario the subjects were also asked why the protagonist would be feeling the way the subject described. Scoring these reasons was more difficult than scoring the names of emotions. Nevertheless the same scoring structure was employed to provide more objectivity and consistency. The reasons given were again divided into preferred and plausible classes and were explicitly stated in a table. See Appendix 1 for details. However, whether or not the subject's written reason was the same as the tabled reasons remained a judgement call by the scorer.

The tabled reasons therefore only indicate a class or type of answer rather than being verbatim standards. The scorer attempted to assess the degree to which the subject grasped the concepts of the emotions of the situation. For example, using the Fear question again, (number 11), in a preferred response the subject would recognise that fear was induced in the boy by the possibility of the boy being hurt by the father hitting him with the jug cord. Any statement to that effect deemed suitable for two points.

The plausible list of reasons demonstrates the respondent has only some understanding of the emotional dynamics of the scenario. For example, using the Fear question (number 11), a plausible response to why did the boy feel confused might be: "The boy does not know why the father is chasing him".

Although the salient point about fearing the pain is absent, it is plausible, given the emotion *confused* and the above reason, that a thirteen year old subject from a loving home would see things this way. This response would be awarded one point.

As with the naming of the emotions, the reasons were allocated one or two points depending upon the quality of the reason given. The three rules used were similar to rules 1-3 above.

4) If the subject wrote down any one of the reasons given on the preferred list, then two points were awarded.

5) If the subject did not write down any of the reasons on the preferred list and did write down any one of the reasons on the plausible list, then one point was awarded.

6) If either Rule 4 or Rule 5 was met then each additional reason given on either list was awarded one point.

Thus both logic and vocabulary appear to be weighted equally. In practice, however, the subject was more likely to write down multiple emotion names than multiple reasons because the names require less writing and perhaps less thinking than just writing the names. The logic and the vocabulary was not required to be paired because sometimes the reason was given without the emotion name which seems to indicate more understanding than no response.

5-4. Scenario scoring: Vocabulary measurements

On the chance that a measure of the emotional lexicon of the students was as good a measure of the student's understanding of the emotion of others as the more complicated

point system above, a simple tally of the total emotion words used including and then excluding duplicates was performed.

The total number of emotion words used included duplicates and was presumed to indicate the ease with which emotive words were used, hence the likelihood of their being used to communicate with other people. All the emotion words used were underlined and later counted to give a total vocabulary score.

The total unique emotions words used excluded any duplicates anywhere on the questionnaire, and was presumed to indicate the extent of the subjects vocabulary, hence the depth of the subject's understanding of the emotions of others. The previously underlined emotions words were counted, ignoring any duplicate usage anywhere on the questionnaire.

6. SCENARIO DESIGN: QUESTION BY QUESTION DESIGN CONSIDERATIONS

This section details the intent behind each question. In addition, an objective scoring key for each question is provided in Appendix 1 and records the points awarded for each emotion word and each reason given by the students. For examples of how students actually responded to each question, see Discussion (Chapter 4) and Appendix 2.

6-1. Question 6: Sadness/Distress/Anguish

> **6. A 60 year old woman's husband died a year ago. They were very close and loved each other very much.** What do you think the woman is feeling and why?

This is the grief question. An older female was chosen as protagonist because the death of a grandfather is the most likely death to which a student might have been exposed. Given that the average life span of men is shorter than women, older relatives are more likely to have died than parents or siblings, and the death of a relative is more likely to have been observed over a period of time than the death of a stranger. Closeness and love in the relationship are specifically stated to indicate greater loss, hence greater sadness, distress or anguish. That the death was a year ago gave the subjects the opportunity to express the concept of reduced grief over time or death anniversary blues. The question was included as the first question because sadness was presumed to be easily recognised, thereby motivating their cooperation.

6-2. Question 7: Pride, peer/older, female

> **7) An athlete has just won her first international sporting event.** As she receives her gold medal, what do you think the athlete is feeling and why?

This is the Pride question. The female protagonist may be a peer or an older woman depending upon the type of sport in which she was engaged. Athletics is a common experience for most students. Winning, the international stature of the event and the moment of the tangible reward all add to the sense of pride in accomplishment, meeting a goal, being the best and representing her country.

6-3. Question 8: Love/Affection/Happiness

> **8) A man and a woman are walking on the beach together holding hands.** What do you think they are both feeling and why?

This is the Love question. Both protagonists were assumed to be feeling the same in a romantic and reasonably intimate setting. Holding hands further indicated a close and supportive relationship

6-4. Question 9: Jealousy/Envy

> **9) A five year old boy watches his mother cuddle his cute 18 month old sister. She tells him to go to his room and stop taking his sister's toys.** What do you think the boy is feeling towards his sister and why?

This is the Jealousy question. The young male protagonist was chosen because adult jealousies would likely be too complex and out of any likely experience of the subjects. Sibling rivalry for a parent's affection seemed more accessible to students. The mother shows love and affection toward the other child by cuddling. The child is cute and the opposite gender thus in the protagonist eyes more deserving of love. The mother intensifies the emotion by apparently rejecting the boy by telling him to go to his room, and reinforces the girl's right to affection by defending the sister's possession of precious objects. The scene shows jealousy for the love the boy believes should be given to him, and feels envious of the toys his sister owns. The difference between jealousy and envy was considered to be too fine a distinction for the subjects.

6-5. Question 10: Embarrassment/Shame/Humiliation

> **10) A public speaker is standing in front of a large audience when he notices that his zip is open.** What do you think the speaker is feeling and why?

This is the Embarrassment question. The protagonist's discovery of his impropriety and his self conscious distress is enhanced by the public view of his condition and the large number of viewers focussed on him at the time of discovery. Whether the speaker

feels embarrassment, shame and/or humiliation depends in part on the speakers view of himself. If the impropriety dominates then he will feel embarrassment. If the self-conscious distress dominates then he will feel shame, and if his pride was sufficiently wounded then he might be feeling humiliation. Izard (1977) adds guilt to this grouping. Although the protagonist may have felt guilty of a breach of conduct, in this scenario guilt seems less likely than the other three emotions since there was no crime committed.

6-6. Question 11: Fear/Terror/Panic/Scare

> **11) A 9 year old boy is running away from his father who is swinging a jug cord over his head and screaming at him?** What do you think the boy is feeling and why?

This is the fear question. The protagonist's situation has several clues to the situation being fearful. He is only nine, thus is clearly smaller and weaker than his father. The boy is running away indicating a desire to escape the situation. The father is swinging a jug cord which is not the cord's normal use, and the father is screaming at the boy indicating the father is behaving abnormally. The boy's fear arises from the imminent danger of being hit which would hurt.

6-7. Question 12: Anger, older, male

> **12)** And what do you think the father in number 11 (above) is feeling and why?

This is the anger question. The protagonist is the father from question 11 above. The father demonstrates his anger by chasing the boy with a jug cord while screaming. This question was linked to the previous question for two reasons. First, the link reduced the number of different scenarios the subjects had to consider. Second, the link tested the subject's understanding of the situation from two viewpoints, namely child and parent.

6-8. Question 13: Surprise/Startle/Astonish

> **13) A teenage girl is daydreaming in a hammock when she hears the loudest bang she has ever heard.** What do you think the teenager is feeling and why?

This is the surprise question. The protagonist is in a very relaxed reverie when with no warning she hears an unexpected, unrecognised sound which rapidly changes her state from relaxed to alarm. Since nothing else happened and the sound did not continue, then she was in no immediate danger, so a fear response was less likely to overshadow the startle response. In retrospect, a better scenario would have focussed more on the surprise aspect, foe

example: "A teenage girl arrived home with a friend. When she turned on the lights, ten of her friends jumped out from behind the furniture".

6-9. Question 14: Curiosity/Interest

> **14) A 12 year old boy hears adults talking about sex in the other room. He sits just around the corner to hear what they are saying?** What do you think the boy is feeling and why?

This is the curiosity question. The protagonist is on the verge of puberty at age 12 when the mysteries of adult sex are still largely unknown to him. Sex is a topic of great interest to him. He is close to but not in the room so there is an element of discovering the unknown. The boy may be hearing things he's never heard or had confirmed before now.

6-10. Question 15: Disgust/Revulsion

> **15) A mother finds her baby rubbing the smelly contents of its diaper all over the crib.** What do you think the mother is feeling and why?

This is the disgust question. The protagonist discovers a foul smelling, sticky substance spread over a difficult area to clean. Although the scene may provoke anger, the anger arises from the disgusting mess. Without the attribution of disgust there would be no call for the anger.

6-11. Question 16: Contempt/Scorn

> **16) A principal tells an 18 year old boy to tidy up his clothes or he'll contact his parents. The boy makes a rude gesture toward the school principal turns his back and swaggers away.** What do you think the boy is feeling and why?

This is the contempt question. The protagonist receives public humiliation by the principal along with a threat of treating him like a child by reporting him to his parents. The principle, as an authority figure, threatens to contact two more authority figures, thus bringing substantial authoritative force to bear on the boy. Surreptitiously, the boy shows his contempt through the lack of respect and wilful disobedience of authority embodied in the rude gesture and the swaggering walk. He shows vigorous contempt, that is scorn, through his angry gestures and disgust at the system.

6-12. Question 17: Anger

> **17)** And what do you think the principal in number 16 (above) is feeling and why?

This is a second anger question, included as a second viewpoint as in question 12 where the father's view is also sought. The principal has been subjected to public scorn while attempting to improve the appearance of the student. The principal is unable to control the boy who insults him, and leaves him with only a weak option of talking to the boy's parents, who apparently have had little success in this venture also.

6-13. Question 18: Boredom

> **18) A woman is listening to a man tell her the same long winded story for the tenth time.** What do you think she is feeling and why?

This is the boredom question. The protagonist has grown weary of hearing the same story she's heard many times before. This question was included because many adolescents complain of boredom and the researcher wanted to know if the subjects would recognise boredom in others. This question was placed near the end because they seemed easier. In retrospect, the boredom question should probably have been omitted considering that for some respondents boredom was probably setting in by now and thus they would be encouraged to switch off.

6-14. Question 19: Guilt

> **19) A mother catches a 9 year old boy doing something he knows he is not supposed to do.** What do you think the boy is feeling and why?

This is the guilt question. The protagonist is caught doing something wrong by an authority figure. Since he knew he was not supposed to do it, he knows he is culpable and deserves punishment. In retrospect, the reason for the guilt was contained verbatim in the question, thus potentially confusing some subjects on how to express the reason in their own words. Perhaps a better wording would have been to give an example of a culpable act such as stealing. However, an example was originally dismissed because people and culture vary widely in their belief about culpability.

7. ADMINISTERING THE QUESTIONNAIRE.

Administering the questionnaire was straightforward. This section outlines the procedures used by the researcher and his assistant. The procedure followed eight steps,

namely submission to the ethics committee, letter to the school principals together with the proposed preamble to the students, and negotiating teacher presence during administration.

The administration's detailed procedure which includes discussion on the administrator's intro to the students, handing out the questionnaires, answering questions, collecting the finished papers and a class discussion of the questionnaire. Each of these points will be discussed in the order given.

7-1. Ethics Committee

The questionnaire, letter to principals and the proposed text of the preamble to students were submitted to the University's Human Ethics Committee. The committee approved the questionnaire pending "formal consent being obtained from Principals and that a rubric be put on the questionnaire stating voluntary character of participation". Both these items were actioned accordingly.

7-2. Letter to the Principal

Each principal was phoned to request the school's participation and a meeting was arranged with each principal, or more often with someone designated by the Principal. The text of the questionnaire, a letter of introduction to the Principal, the text of what would be said to and expected of the students and a consent form for the Principal to sign, were presented and discussed with the Principal and/or the principal's designee.

7-3. Text of the preamble

The text of what the students would be told was submitted to the school for approval. All approved with the proviso that the information be presented to the students in an abbreviated and informal manner. See Appendix 1 for the text of the preamble.

7-4. Teacher's presence

The teachers, for the most part, introduced the researcher, beseeched the students to complete the questionnaire and left the classroom, returning a few minutes before the end of the class period. Occasionally, the teacher assigned a student teacher to monitor the class, otherwise this role was left to the researcher.

7-5. Administrator's detailed procedure

Instructions for the questionnaire administrator are on Appendix 1. On some occasions the school required two classes to fill in their questionnaire simultaneously in two

different classrooms, so a revised preamble was prepared. This also served as a check list for the administrator and a document of the procedure as it was actually done from start to finish.

This procedure fulfilled administrative and ethical requirements. In concept the students were told what the research was and why it is important, who prepared the questionnaire and his qualifications for doing so, the guarantee of anonymity and confidentiality, the voluntary character of participation, an explanation of the format of the questionnaire , a request to label the questionnaire with a class code and the teacher's surname to keep multiple classes at the same form level at the same school separately identifiable, a brief explanation of the income demographic question which was difficult for many students, the face down and random collection of completed questionnaires to complete the anonymity contract, a vote of thanks for participation, and finally they were told that a discussion on the questionnaires would be conducted afterwards.

During the time the students were filling in the questionnaire the researcher or the administration assistant were available to answer questions. Collaboration was curtailed as much as possible. The results of the class discussion are included in the Results Chapter 4.

8. SUBJECTS

The overriding goal in selecting subjects was to balance the subjects numbers in the various demographic categories. Five high school kindly gave their time to this study giving reasonable diversity and a total of 357 subjects. The complete summary of participants is in Appendix 3. A summary of subjects follows in Table 6 and 7.

Several demographic anomalies are apparent from the data. First, the number of subjects reporting their parents was unknown to them was very high. Second, the number of subjects in races other than Caucasian were very low. And finally, some Form 4 and Form 6 students apparently were attending Form 3, 5, or 7 classes.

8-1. Aranui High School

Aranui High School is a mixed gender public school located in perhaps the most economically depressed area of Christchurch. The average income of the subject's parents was less than $35,000 with many beneficiaries in the sample. The students are divided into A - stream and B - stream classes. The deputy principal selected both A and B stream classes for both Form 3 and Form 5 providing the possibility for some interesting comparisons.

Table 6. ***Student Numbers in Survey***

Group	Females	Males	All
Students	158	209	357
Age 13	36	43	79
Age 14	31	46	77
Age 15	45	33	78
Age 16	19	45	94
Age 17	18	28	46
Age 18	9	14	23
Income Beneficiary	27	10	37
Income Medium	21	44	65
Income High	39	88	127
Income Unknown	71	67	138
Form 3	64	87	151
Form 4	7	8	15
Form 5	58	57	115
Form 6	4	24	28
Form 7	25	33	58
Race Asian	4	9	13
Race Caucasian	121	173	294
Race Polynesian	23	19	42
Race Mixed Poly/Caucasian	9	6	15
Learn Y	118	123	241
Learn N	26	59	85
Learn U	14	27	41

Table 7. ***Student numbers by school***

Aranui	Females	78
	Males	29
	All	107
Hillmorton	Females	27
	Males	25
	All	52
Shirley Boys	All Males	67
St. Bead's	All Males	88
St. Margaret's	All Females	53

8-2. Hillmorton High School

Hillmorton High School is a mixed gender public school located in an average working class area. The average income of the subject's parents was less than $35,000 per year. The students were not streamed.

8-3. St Bede's College

St Bede's College is a male only, recently integrated, church run school. Students mostly drawn from throughout Christchurch metropolitan area with some from other cities also attending. There is a charge of approximately $500 per term and the average income of the student's parents is a mixture of over and under $35,000 per year. The students were not streamed. Approximately 65% will attend University after high school.

8-4. St Margaret's College

St Margaret's College is a female only, private High School. Students are drawn from Christchurch with a substantial number boarding from out of town locations. There is a $1,500 per term charge, plus $1,500 per term boarding fee for non-resident students. The average income of the student's parents is greater than $35,000 per year. Approximately 95% of students will attend University after leaving High School.

8-5. Shirley Boys High

Shirley Boys High is a male only integrated high school located in a middle class area. Students are drawn substantially from the local area with some students commuting from more distant suburbs. There is a $500 per term charge and the average income of the student's parents is a mixture of over and under $35,000 per year. The students in Form 3 through Form 5 are streamed into A and B whereas Form 7 is not.

8-6. General comments

The schools chose which classes would be available within the framework of the request for Form 3, 5 and 7 classes. This produced some minor distortions on the ideal cross section. Student numbers and demographic profiles are included in the Results Chapter (4).

CHAPTER THREE

RESULTS

The results of the questionnaire are presented by gender, age, school, form level, income level, and racial group in terms of total score, total vocabulary and total unique vocabulary. First, an overview of the data is presented examining the distribution of total scores, total vocabulary and unique vocabulary followed by a discussion on the income, race, form and academically streamed data. Second, the detailed results of the statistical and graphical analysis are presented. See also Appendix 2 for a sampling of completed questionnaires and Appendix 6 for a fold out of the questionnaire. See Appendices 3, 4 and 5 for summary data.

1. OVERVIEW OF THE DATA

1-1. Distribution of total scores

The term total score refers to the total points awarded for emotion naming and reasons given. The distribution of total scores (Fig. 1) shows a nearly normal distribution with an overall mean of 45 and a standard deviation of 20. Both the Chi-Square and Kolmogorov-Smirnov tests were not significant further supporting normality in several dimensions. The distribution is neither skewed (skew = .15) nor peaked nor particularly flat (Kurtosis = -.14). The normal probability plots of the total score (Fig. 4) and gender (Fig. 5) distributions shows an excellent fit with no substantial outliers. The scores fall on an interval scale where a doubled score is twice as good as one that is not and it covers a substantial range of 104 intervals. Although the bottom end of the scale might be considered to be slightly loaded from the scoring procedure which gave two points for the first preferred emotion and reason, the two points were needed to distinguish the preferred from the plausible answers which received only one point for the first answer.

The above reasons all suggest that the prerequisites for the more powerful parametric tests can be used with confidence instead of the less powerful non-parametric tests. As a consequence, the t-Test, ANOVA and MANOVA procedures were performed on this measure.

1-2. Distribution of Total Vocabulary and Total Unique Vocabulary

The term Total Vocabulary refers to the total number of emotion words the subject used (Fig. 2) and the term Unique Vocabulary refers to the total number of different emotion words used (Fig. 3). While both means (18, 14) were in reasonable proportion to the standard deviations (8.5, 6.5), both distributions were skewed left (skew = 1.2 , 1.1) and were quite peaked (kurtosis = 4.2, 3.3). Therefore these two measures were used only for graphical analysis.

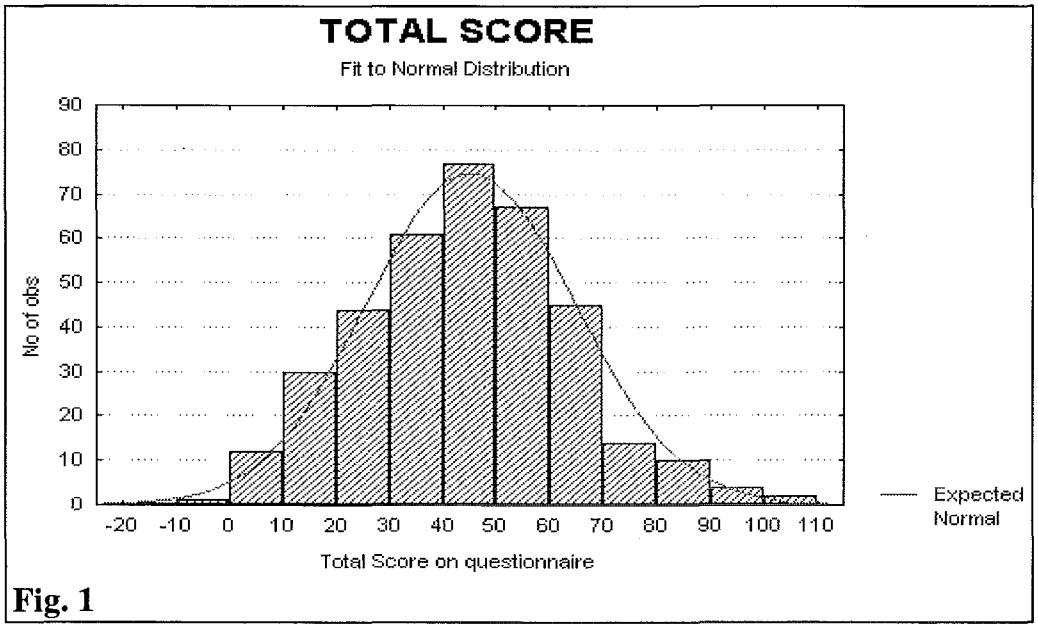


Fig. 1

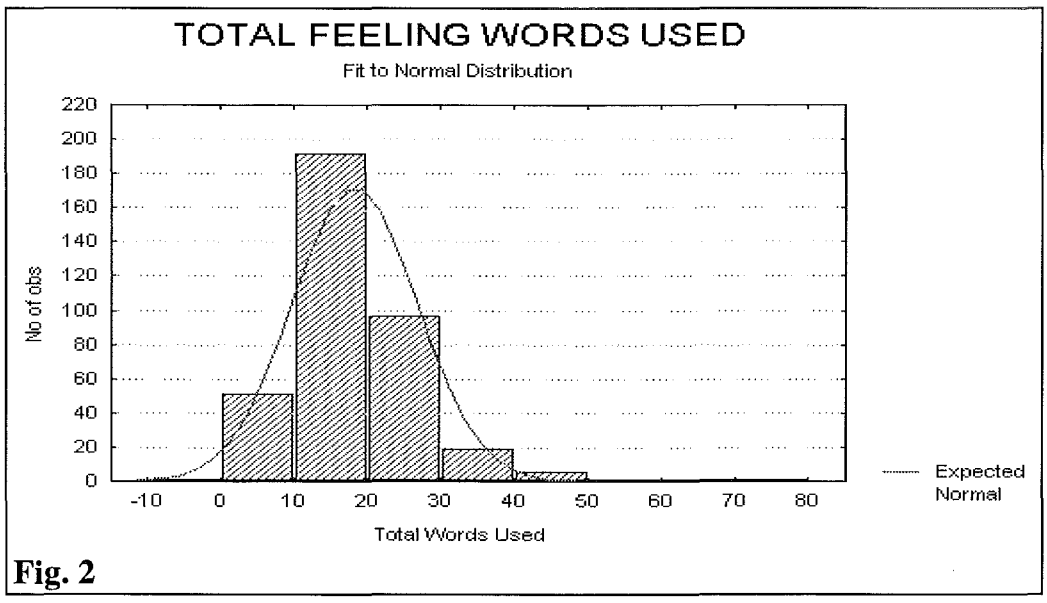


Fig. 2

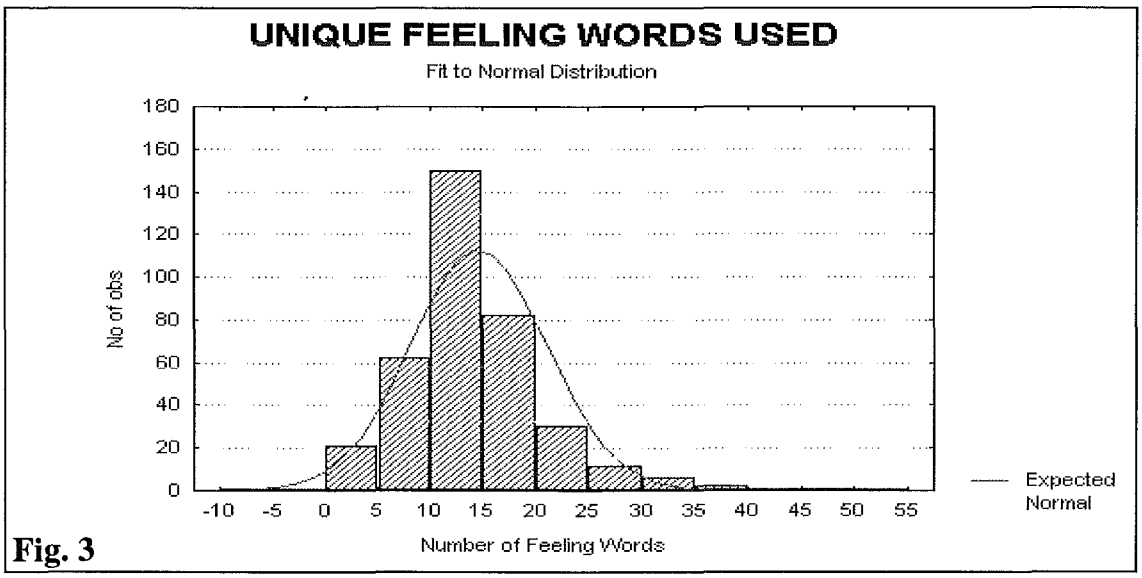

UNIQUE FEELING WORDS USED
Fit to Normal Distribution
No of obs
180
160
140
120
100
80
60
40
20
0
-10
-5
0
5
10
15
20
25
30
35
40
45
50
55
Number of Feeling Words
Expected
Normal

Fig. 3

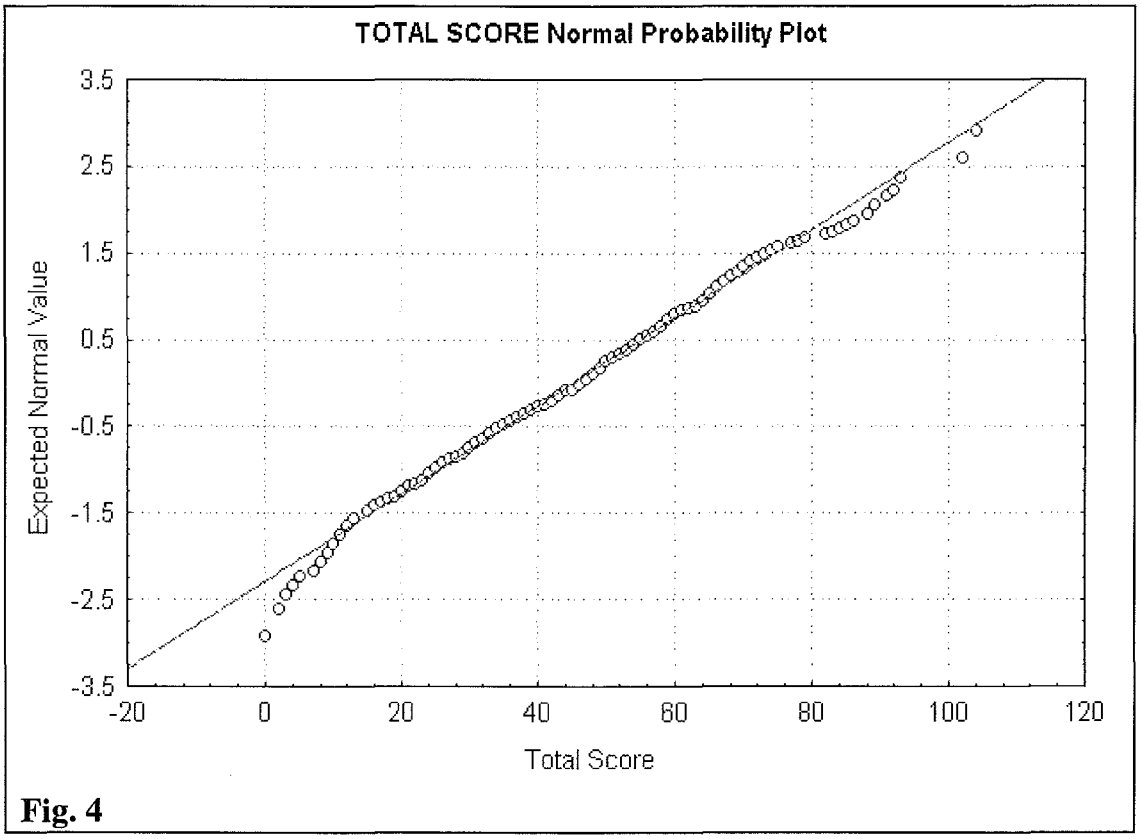

TOTAL SCORE Normal Probability Plot
Expected Normal Value
3.5
2.5
1.5
0.5
-0.5
-1.5
-2.5
-3.5
-20
0
20
40
60
80
100
120
Total Score

Fig. 4

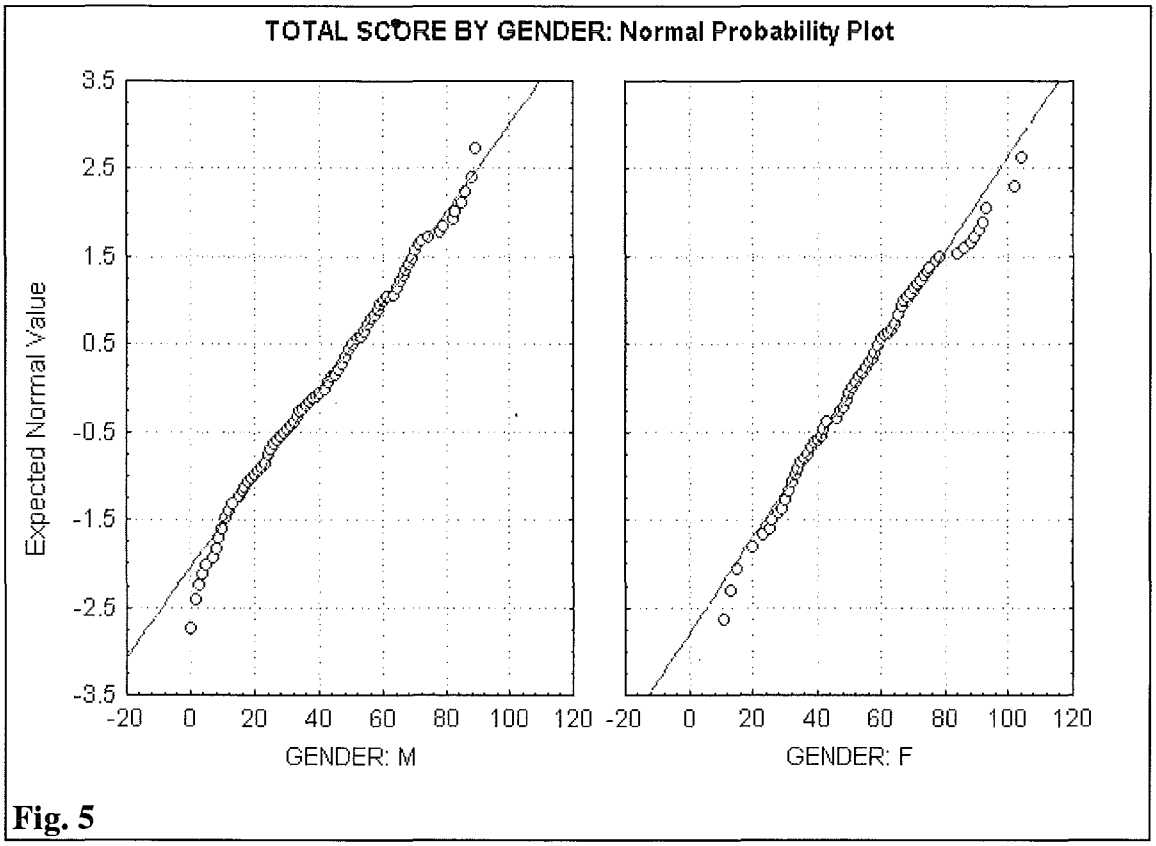


Fig. 5

1-3. Other features of the data

Income

A very substantial number of students (138 / 357 = 39%) answered "*unknown*" to the income question. Inspection of the raw data showed a large proportion of the unknowns were from Aranui High School. A reasonably safe assumption could be made that virtually all of the Aranui "*unknowns*" had parents with incomes less than $35,000 given the economic depression of the Aranui area. Also, unless the student had a scholarship, then all of the students at St. Margaret's would have incomes greater than $35,000 given the $3,000 - $6,000 per annum fees. The income status of the students from other schools is less clearly defined.

Therefore, the decision was taken for some analyses to adjust the "*income unknowns*" to 'Medium' income for Aranui and to adjust the "*income unknowns*" to 'High' for St. Margaret's. Further, the Beneficiary and Medium groups were combined into one group of Low incomes for two reasons. First, beneficiaries and some very low income non-beneficiaries may have identical incomes and second, the beneficiary group had low numbers (n = 37 / 357).

Race

As is usual in Christchurch, only small numbers of Maori, Asian, and Pacific Island students were in the sample. The doubling up of classes in Aranui was in part an attempt to redress this balance, however, a very large number of respondents (82%) identified themselves as Caucasian leaving only a small number of non-Caucasians (n = 70). Of that, only a portion identified themselves as Polynesian (n = 42) or mixed Caucasian / Polynesian (n = 12). Some comparisons were done using the combined group (n = 57), however these results need to be viewed as potentially unrepresentative of either the Maori or Pacific Island culture.

Form number

Although only Forms 3, 5, and 7 were requested, some Form 4 and Form 6 students were present in some home room classes and Hillmorton substituted a Form 4 for a Form 5 class due to scheduling difficulties. Thus Hillmorton School mean scores are somewhat lower than other schools due in part to this distortion. Also St Bede's Form 7 was a combined Form 6 and 7.

Streamed classes

In Shirley Boy's High Form 3 and 5, and in all forms in Aranui High School, students were separated into 'A' and 'B' academic streams.

2. TOTAL SCORE ANALYSIS

2-1. Distribution of Total Scores by Gender

There are several outstanding features of the distribution of total scores by gender (Fig. 6). The difference between the female mean scores (x, 51.3, 18.0) and the male mean scores (x, 40.4, 19.5) is highly significant ($t(355) = 5.4$, $p < .001$). This pattern is also visible at the lower end of the distribution (< -1 std dev = < 25 points) where only one-quarter of all females (24%) scored less than 25 points, while nearly half of all males (49%) scored less than 25 points. At the top end of the distribution (> +1 std. dev. = > 65 points), a similar discrepancy exists where females (22%) again outscored males (11%) in the same ratio of 2:1.

To put this into proportion, a 25 point score would on average require 1.8 points per question which translates to less than either one preferred emotion name or one plausible emotion name plus one plausible (not preferred) reason for the emotion per question. A sample 2 point

answer to question 6 (grief) would be either "sad" or "happy because she collected his insurance policy".

A mean score (45 points) would on average require 3.2 points per question which translates to less than one preferred emotion name plus one plausible reason per question. A sample 3 point answer to question 6 (grief) would be either "sad and lonely" or "sad because he's dead".

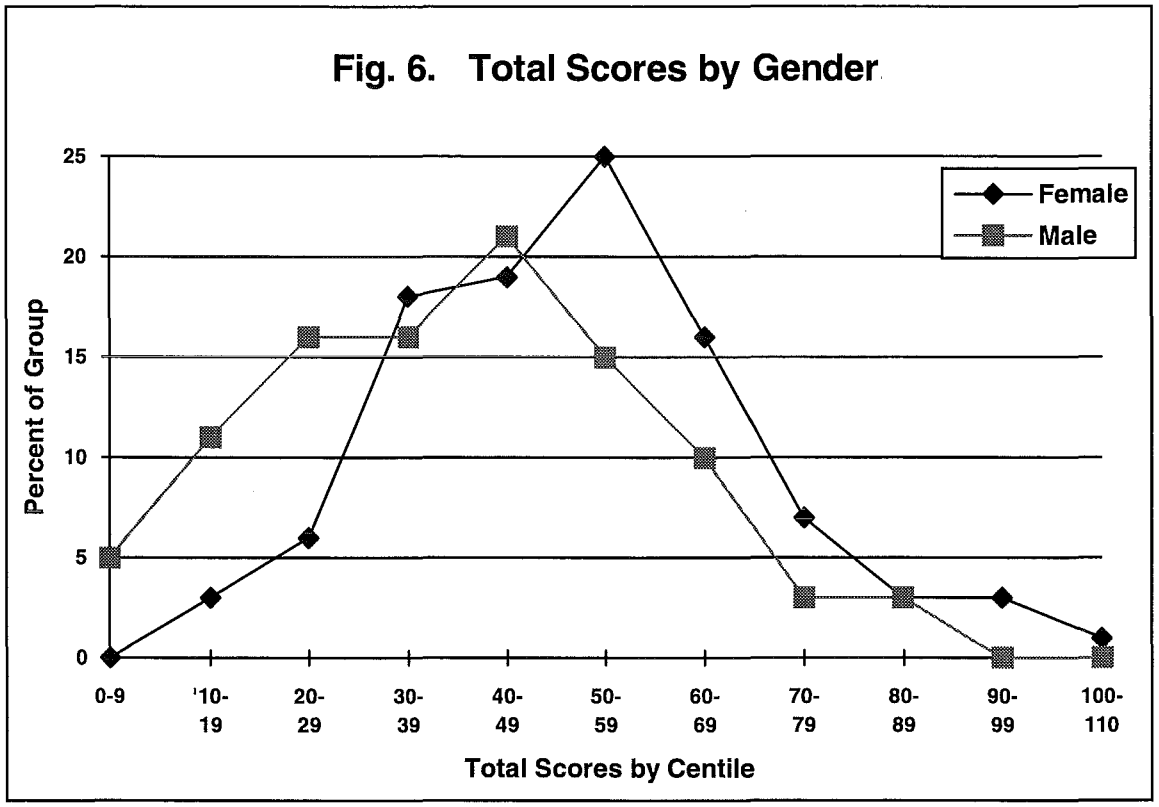
A 65 point score would require 4.6 points per question which translates to one preferred emotion name and preferred reason plus an occasional extra name or reason. A sample 5 point answer to question 6 (grief) would be "sad and lonely because she misses him".

A sample 25 (-1 std. dev.), 45 (mean) and 65 (+1 std dev.) point questionnaire is included in Appendix 2. Also a very low (10 point) and the top (102 point) questionnaire are included in Appendix 2 to show the range of responses.

The bulk of the total scores (Fig. 6) (+/- 1 std. dev.) are between 25 and 65. As can be seen from the sample questionnaire responses, scores of less than 65 points demonstrates only a minimal understanding of the emotions of others. Scores over 65 points start to show some passable understanding of the emotions of others and scores over 80 begin to show some deeper understandings. Unfortunately only 16 students (5%) scored 80 or more points in a sample of 357.

2-2. Distribution of Scores by Question and Gender

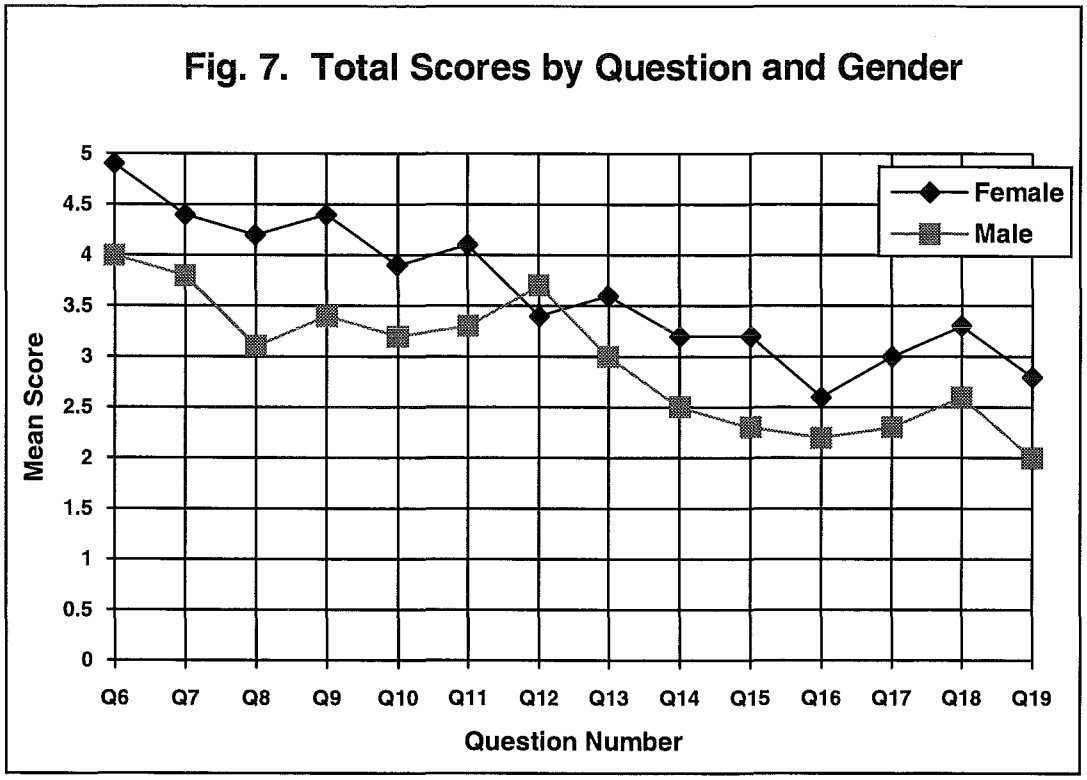
There are several noticeable features of the distribution of scores by question (Fig. 7). The mean score declines steadily from the beginning to the end of the questionnaire. There are several possible explanations for this. There may be a tiredness factor. The questions were in the same order on all questionnaires. Several sets of questionnaires could have been created with varying orders of the questions to control for any tiredness factor, however this posed difficulties in scoring and reporting on the results. The first six questions were intended to be easier than the second. The last two scenario questions were intended to be easy to compensate in part for the tiredness factor. The graph (Fig. 7) shows an upsurge for the last two scenarios however, there was not as many points readily available for these two questions, therefore the rise in points awarded was not dramatic.



Males out-scored females only on question 12 in which the emotions of an angry father were sought. Male scores were improving toward the end of page one (Q6 - Q12), but dropped off rapidly on page two (Q13 - Q19) with only the boredom question giving any respite to the downward trend. Perhaps the thought of doing another whole page was too daunting to subjects who were perhaps not overly interested in the subject matter. This trail off of interest by males could indicate a greater reluctance or inability to persevere in conversations about emotions.

Question 16 (contempt / scorn) was undoubtedly the hardest question for both genders even though it provided one of the widest scopes for gaining points (see Appendix 1, scoring key). The concept of contempt and scorn seemed beyond their general understanding and was largely referred to as "cool" or "angry".

Females, on average, provided more (23%) information than males. This could be accounted for either as a measure of verbal skills or general understanding, and most likely was some combination of both.



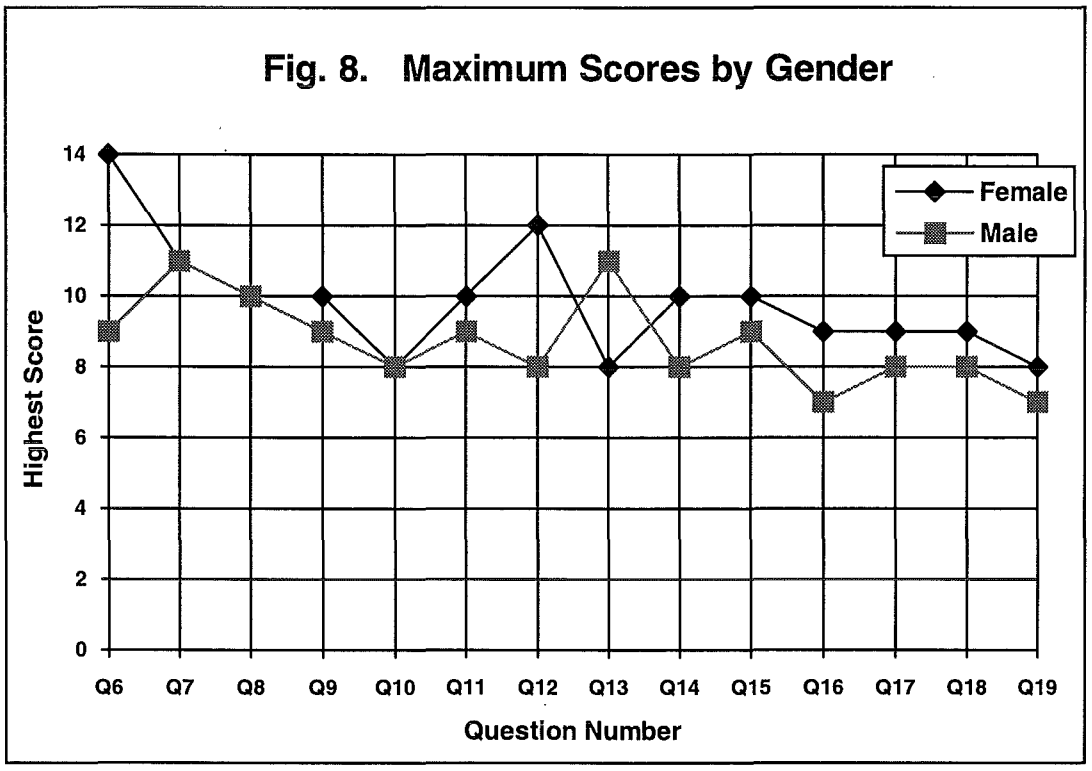
2-3. Distribution of Maximum Scores by Gender

The distribution of maximum scores by question and gender (Fig. 8) shows less separation between males and females than the distribution of mean scores . The most apparent differences are in three questions. One female student showed a very substantial understanding of the grieving process with a score of 14 points on question six (grief), while the best a male achieved was nine points. Interestingly, the top female substantially outscored the top male on question 12 (father's anger), yet the top male substantially outscored the top female on question 13 (female startle).

The distribution gives an indication of how many points were available in each question. The slope of the line is still decreasing toward the latter parts of the questionnaire, however the fall off is a lot less than for the distribution of mean scores. Most (75%) of the 28 maximum scores fell between 8 - 10 points inclusive, with five above and two below this range. The fact that the top scorers consistently achieved 8 - 10 points on each question supports two ideas. First, most questions seem to be of similar difficulty. Second, a knowledgeable student, male or female, was able to score consistently high on all questions without much tail off for

tiredness towards the end of the questionnaire. This suggests that the tail-off seen in the mean scores may be more indicative of ignorance and disinterest than just tiredness.

Question 19 (guilt) produced curious results with the lowest maximum scores for both males and females. Although some managed to get the idea of guilt, many were preoccupied with getting caught doing something they thought was acceptable but the parent did not. The parent was blamed by the child for making unrealistic restrictions on their behaviour, rather than the child taking personal responsibility .



2-4.. Distribution Of Zero Scores By Gender

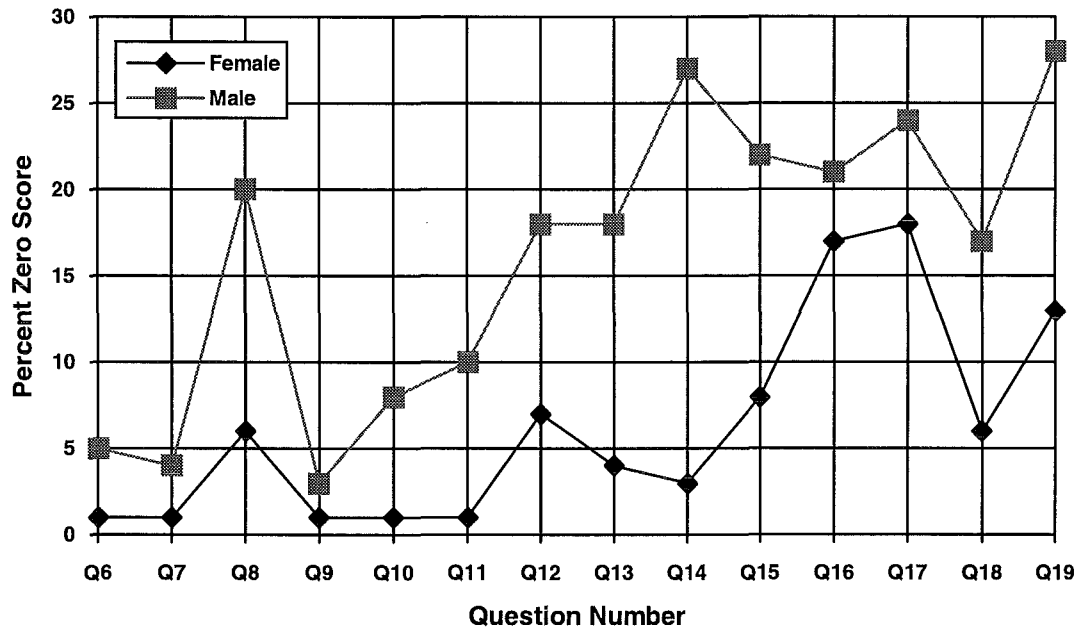
The distribution of zero scores by gender (Fig. 9) shows the frequency of students who were unable or unwilling to answer specific questions. The difference between male and female zero scores is very apparent. Both peer pressure during the class and ignorance appear to be factors for the males.

In question 8 (Love), the ratio of male to female zero scores is 3:1 with 20% of males not responding. A large proportion of the zero scoring males (= 75%) were in the younger age group (< 15 yrs old). Many of the male's answers were highly sexualised and the attention of some males apparently became fixed on sexual matters for the rest of the questionnaire.

Question 16 (Contempt) and Question 17 (Anger/Insulted) proved to be the most difficult for everyone. Females had their highest number of zero scores (> 17%) on these two questions. This pair of questions required the student to visualise a sequence of events preceding the action of concern, thus making the question cognitively more difficult. Many (Males = 24%, Females = 18%) appeared to have no concept of what the principal in question 17 was feeling.

The largest disparity in zero scores occurred in question 14 (Curiosity). Males (27%) were nearly at their worst, whereas females (3%) performed quite well. Many males responded with sexual comments about physical feelings rather than emotions. Finally, question 19 (Guilt) saw the largest zero scores for males (28%).

Fig. 9. Zero Scores by Gender



2-5. Distribution of Scores by Form and Gender

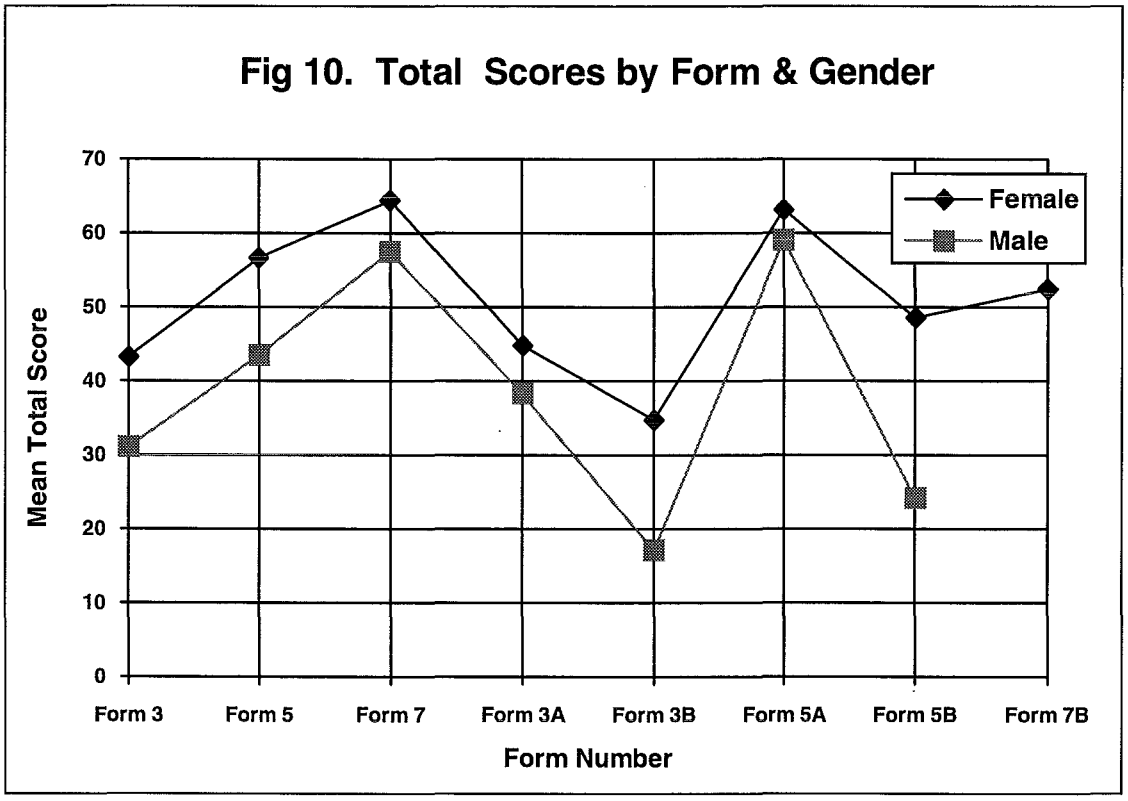
The distribution of scores by form and gender (Fig. 10) shows a steady growth over time in all students' understanding of the emotions of others . Females increased their mean scores by 50% from Form 3 to Form 7 while males increased their scores by 87% over the same period. The mean score differences between Form 3 and Form 5 (t (264) -6.1, $p < .001$), and between Form 5 and Form 7 (t (171), -3.4, $p < .001$) are highly significant with older students out-performing younger students.

Within Form across gender comparisons

The mean score differences between Form 3 females and males (t (149) 4.8, $p < .001$) and Form 5 females and males (t (113) 3.6, $p < .001$) were highly significant with females out-performing males. There was no significant difference between Form 7 females and males.

Across Form and within gender comparisons

For females, highly significant differences exist between Form 3 and Form 5 (t (120) -4.5, $p < .001$), between Form 5 and Form 7 (t (83) -4.8, $p < .001$) and consequently between Form 3 and Form 7 with older females out-performing younger females. For males, highly significant differences exist between Form 3 and Form 5 (t (144) -4.0, $p < .001$), between Form 5 and Form 7 (t (88) -3.4, $p < .001$) and consequently between Form 3 and Form 7 with older males out-performing younger males.



Streamed student comparisons

Streaming data gives an insight into segments within Form levels selected by demonstrated academic ability (Fig. 10). In the schools studied, Streamed students fall into two groups. The term 'A' stream refers to students with above average academic performance and the

term 'B' stream refers to students with below average academic performance. The term Unstreamed refers to students in classes where no distinction is made between students of lower or higher academic performance. The data for Unstreamed is a distinct group from Streamed (either 'A' or 'B') and is ***not*** an average of 'A' and 'B' classes.

Overall

Comparison of the 'A' stream students with the 'B' stream students shows a highly significant difference ($t(154)$ 4.6, $p < .0001$) with the 'A' stream achieving higher scores. Comparison of the 'A' stream students with the 'Unstreamed' stream students shows no significant difference. Comparison of the 'B' stream students with the 'Unstreamed' stream students shows a highly significant difference ($t(282)$ -4.8, $p < .0001$) with the 'Unstreamed' stream students achieving higher scores.

In fact the difference in means between 'A' stream students (48) and 'Unstreamed' stream students (47.5) is negligible. This equality of means suggests several possibilities. First, the development the emotional understanding of others by 'Unstreamed' stream students may be accelerated to the 'A' level by mixing higher and lower academic achievers. Second, the development of 'A' and 'B' streams is retarded by the segregation of higher and lower academic achievers, or third, some of both may be occurring.

'B' Stream

For both males and females, scores for Form 3B and 5B are both significantly lower than their Form 3A ($t(74)$ 3.3, $p < .002$)and 5A ($t(67)$ 6.6, $p < .001$) counterparts , indicating that the scholastic screening process for academic streaming clearly selects for students differing in the emotional understanding of others as measured by this survey. Since very few students in 5B continue to 7B at the present time, the 'B' stream includes most of the students who drop out of school before Form 6 and 7. Thus, the lower end of the distribution of scores for Form 7 has been attenuated by excluding the least academically successful segment of the 17 - 18 year old population. and so may not be a true sample of the mean scores for all persons of Form 7 age.

Assuming a straight line growth of male scores from Form 3B to 7B as observed between Forms 3, 5 and 7, the Form 7B male group (dropouts) would achieve an estimated mean score of 34 for a net gain of 100% over Form 3B. However, in absolute terms, a Form 7B score of 34 is substantially less than the mean Form 3 female (43), and only marginally higher than the mean for Form 3 males (31). This may identify a group with serious deficits in the emotional

understanding of others and all that implies. The 'B' stream males are entering adult life with the emotional understanding of an average pre-pubescent teenager.

'A' stream and Form 7

Of those remaining in school to Form 7, there is only a marginal difference between female and male scores (t (56), $p < .06$) which shows a reasonable parity between the genders within the academically inclined.

Females and males in both Form 3A and Form 5A, show no significant difference in total scores. Since the 'A' stream males are only at a slight disadvantage to the 'A' stream females, then most of the significant differences between Form 3 females and males (t (150) 4.8, $p<.001$) and between Form 5 females and males (t (114), $p < .001$) can be explained by the presence of male 'B' stream students in these groups.

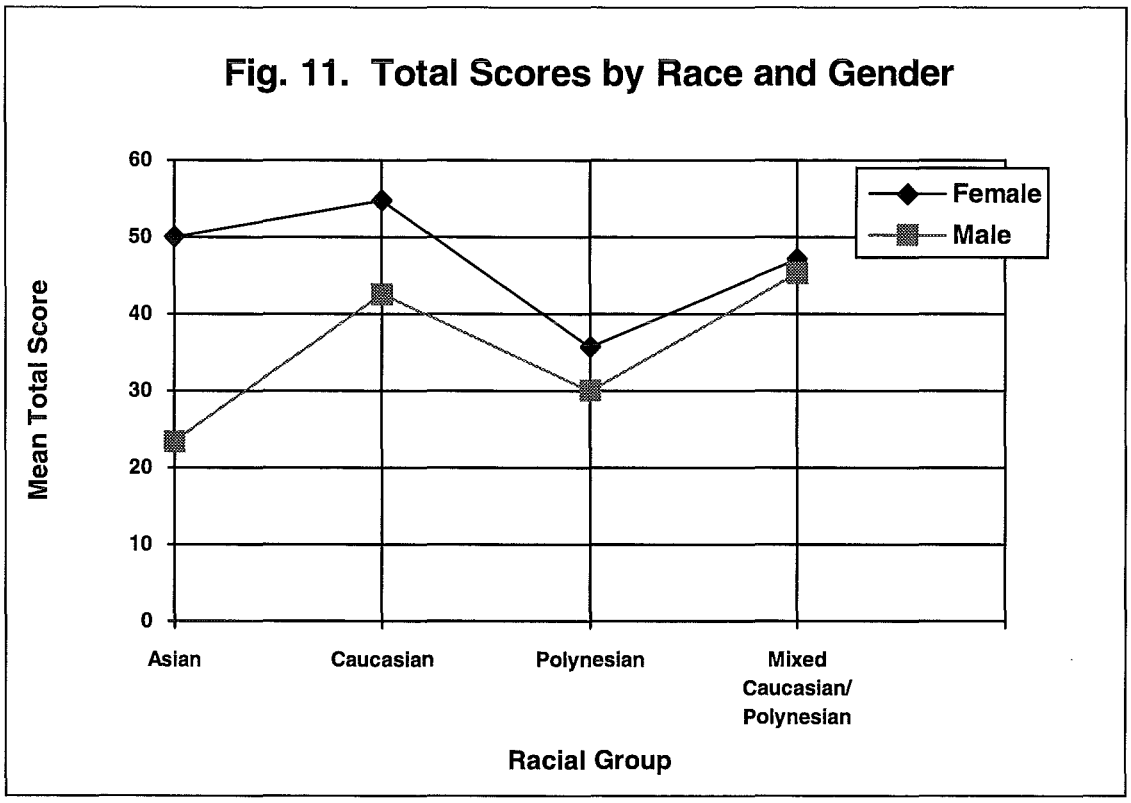
Interestingly, Form 3A males are at a slight advantage over Form 3B females and more importantly Form 5A males are at a distinct advantage over Form 5B females, Form 3A and Form 3B females, and somewhat advantaged over Form 7B females. In other words, Form 5A males (age 15- 16) have parity with or significant advantages over all females except Form 7A. In simpler terms, the Form 5A males may know as much or more about the emotions of the Form 3, 4, 5, 6 and 7B women than those women know about the emotions of Form 5A males.

2-6. Distribution of Mean Scores by Race and Gender

The distribution of scores by race (Fig. 11) shows a significant difference between Caucasian and Asian (t (305) 2.9, $p < .005$) as well as Maori and Polynesian (t (55) 2.6, $p < .01$) groups although the low numbers in the Asian (n=12) and Maori (n= 15) may indicate unreliable results.

Some Asian questionnaires had the first few questions well answered but the students were unable to finish due to English language difficulties. Asian females (n=4) scored on a par with Caucasian females, however the Asian Males (n=9) were at a distinct disadvantage. This could be a population anomaly due to small numbers of Asian respondents.

Also many Maori may have listed themselves as Polynesian. The distribution also shows highly significant differences between Caucasian and Polynesian (t (334) 4.7, $p < .001$) and between Caucasian and combined Polynesian / Maori (t (347) 4.1, $p <.001$) groups.



2-7. Distribution of Mean Total Scores by Age and Gender

Age means

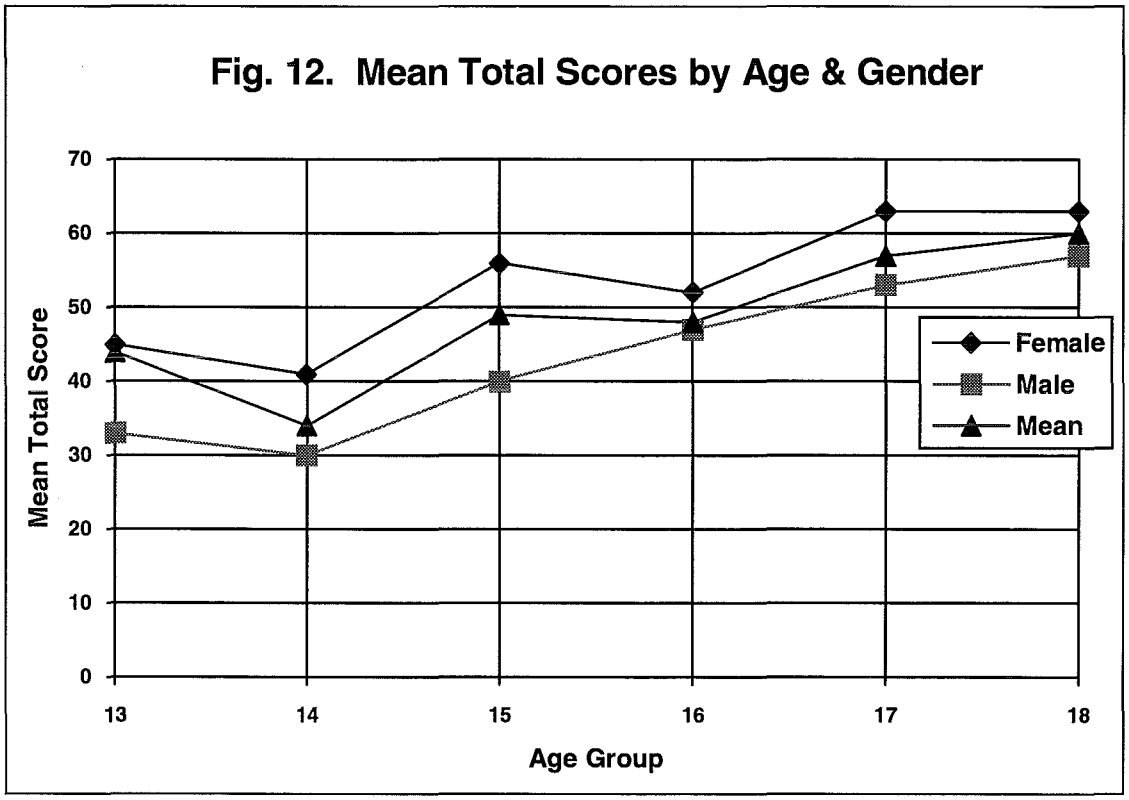
Several significant differences occur between adjacent age groups and more occurred as the ages were separated (Fig. 12). For adjacent age groups, age 14 - 15 had a highly significant difference (t (154) -5.1, $p < .001$) and age 16-17 had a significant difference (t (138) -2.3, $p < .05$) with older students out-performing younger students. The differences between 13 - 14 year olds was reversed with 13 year olds outperforming 14 year olds but not significantly. Similarly, the differences between 15 - 16 year olds was reversed with 15 year olds outperforming 16 year olds but not significantly.

An explanation for this might be that since Forms 3, 5 and 7 were tested, most of the 14 year olds tested would have been in the same class as the 13 year olds (Form 3) and most of the 16 year olds tested would have been in the same class as the 15 year olds (Form 5). Further, the 13 year olds would be approaching 14 and the 14 year olds would have just turned 14. A parallel situation exists for 15 - 16 year olds. Thus the test could not discriminate between different ages in the same Form class, either because emotional understanding is partly a function of the peer group or the actual age differential in months was too small. Consequently, Form rather than age comparisons were used in the MANOVA.

For non-adjacent age groups, age 13-15 showed a highly significant difference ($t(156) -3.5$, $p < .001$) Both 15 -17 and 15 - 18 age groups showed significant differences ($p < .05$). The less significant differences between the older age groups may indicate either a slow down in the learning process, a peaking of the learning rate between 13 - 15, or the questionnaire did not provide the opportunity for older students to demonstrate their additional learning.

Gender means

The overall pattern (Fig. 12) shows a narrowing of the gap in mean scores as age increases. By age 18, there is no longer any significant difference between the female and male mean scores.



2-8. Distribution of Mean Total Scores by Income and Gender

Raw income data

The distribution of mean scores by income (Fig. 13) shows that there are no significant differences in the mean total scores of the four income groups taken from the raw data. However, there were gender differences within each income group.

In all income groups, females outscored males. The low income group showed no significant difference between males and females. However, for the middle income group, females scored significantly higher than males (t (63) 2.6, p , .01) and for the high income group, females outscored males highly significantly (t (125) 3.9, $p < .0001$). In short, the higher the income level, the greater the performance disparity between genders, and the greater the significance of the difference.

Low income females were significantly outscored by both middle income females (t (46) -2.0, $p < .05$) and high income females (t (64) -2.5, $p < .02$).

There were no significant differences in mean total scores within Forms 3, 5, or 7 between students of different income levels.

Adjusted income data

After the data was edited to reallocate the "*income unknown*" groups as described above, the low and high income groups showed nearly identical mean scores (Fig. 14). However middle income females significantly outscored middle income males (t (166) 2.2, $p < .03$) and high income females highly significantly outscored high income males (t (138) 4.1, 0 , .0001). Thus, the greatest disparity between males and females in a given income class occurs between high income males and females.

2-9. Distribution of Mean Total Scores by School and Gender

The distribution of mean score by school shows some unexpected results (Fig. 15 & 16). The scores, however, must be examined carefully within the context of the underlying data to avoid misinterpretation.

There are three factors which must be considered before conclusions can be drawn. First, Hillmorton High School gender averages may be somewhat lower because at the last minute a Form 4 class was substituted for the Form 5 class. Since there was no Form 5 in Hillmorton's data and since there is rapid growth in total scores between Form 3 and Form 5 for most students, the inclusion of the Form 4 class reduces the overall school averages. Because there is an average increase in scores of 40% between Form 3 and Form 5, the average scores for the Form 4 groups should be increased by 20% to compensate, assuming linear development. Thus Hillmorton's school-wide scores increase by 5% for female scores (to 45) and 6.4% for male scores (to 27). This adjustment creates no relative positions change for the Hillmorton males among other males, however the Hillmorton females move slightly ahead of the Aranui males.

Fig. 13. Mean Total Scores by Income & Gender

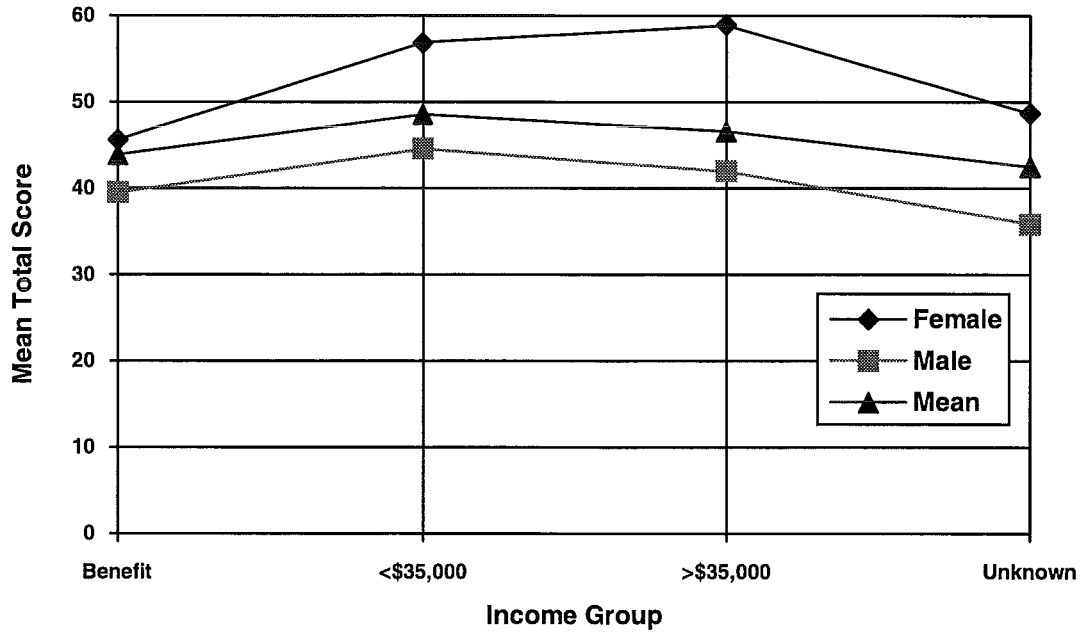
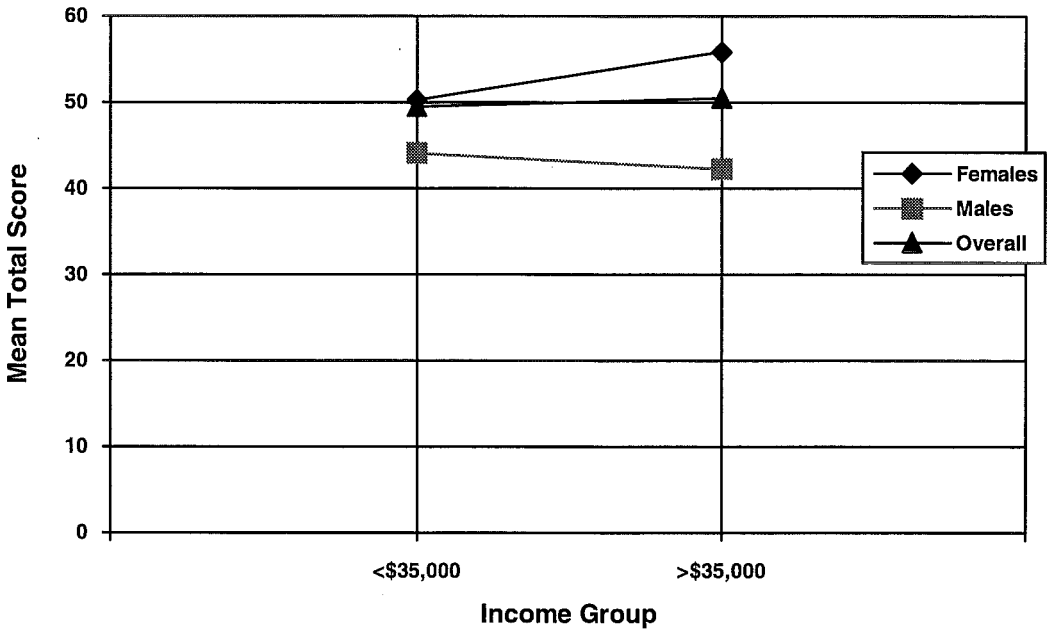


Fig. 14. Mean Total Scores by Adjusted Income



Second, the St Margaret's average total is very high due to the exceptionally high scores of their Form 3 and Form 5 classes not because the Form 7 class performed significantly better than other Form 7 students. In fact, the Hillmorton Form 7 class average was slightly higher than St. Margaret's Form 7 (Fig. 15 & 16). The remarkable feature of St. Margaret's was the performance of the lower Forms. The possibility exists, however that the questionnaire did not provide the opportunity for the Form 7 students to fully display their understanding, thus the questionnaire may not have discriminated among the more mature students.

Third, the participating Hillmorton Form 7 class had only two males, whereas Shirley Boy's High had 18 males and St. Bede's had 11 males plus 26 Form 6 males as well. Consequently, the Hillmorton male average had very little input from the potentially highest scoring subgroup (> Form 5), thus seriously depressing the overall average for males.

Aranui High School, from the lowest socio-economic area of Christchurch, scored higher than Hillmorton and Shirley Boy's high, equal to St. Bede's and less than St. Margaret's. This result lends support to the income results (non-adjusted) which showed no statistically significant differences in average scores by income.

Hillmorton High School male average scores, even after adjustment, were by far the lowest, however considering the above discussion, no clear conclusions can be drawn. Shirley Boy's High average score was lower than St. Bede's and Aranui. However, since St. Bede's had twice as many students in Form 6 and 7 than Shirley, St Bede's average is weighted favourably by the preponderance of older students. Shirley Boy's High is further disadvantaged on the overall average scores because for Form 5, only a 'B' stream class was used.

2-10. Distribution of Male Scores by School and Form

The distribution of male scores by school and form (Fig. 17) has several interesting features. Hillmorton males show the greatest growth of any group from Form 3 to Form 7. Unfortunately, there were only two males in the Hillmorton Form 7 class, thus the Form 7 scores may be unreliable. Shirley Boys High shows negative growth from Form 3 to Form 5 because Form 3 is an 'A' stream, whereas Form 5 is a 'B' stream. The Shirley Form 7 Unstreamed stream males are roughly on a par with other Form 7 males.

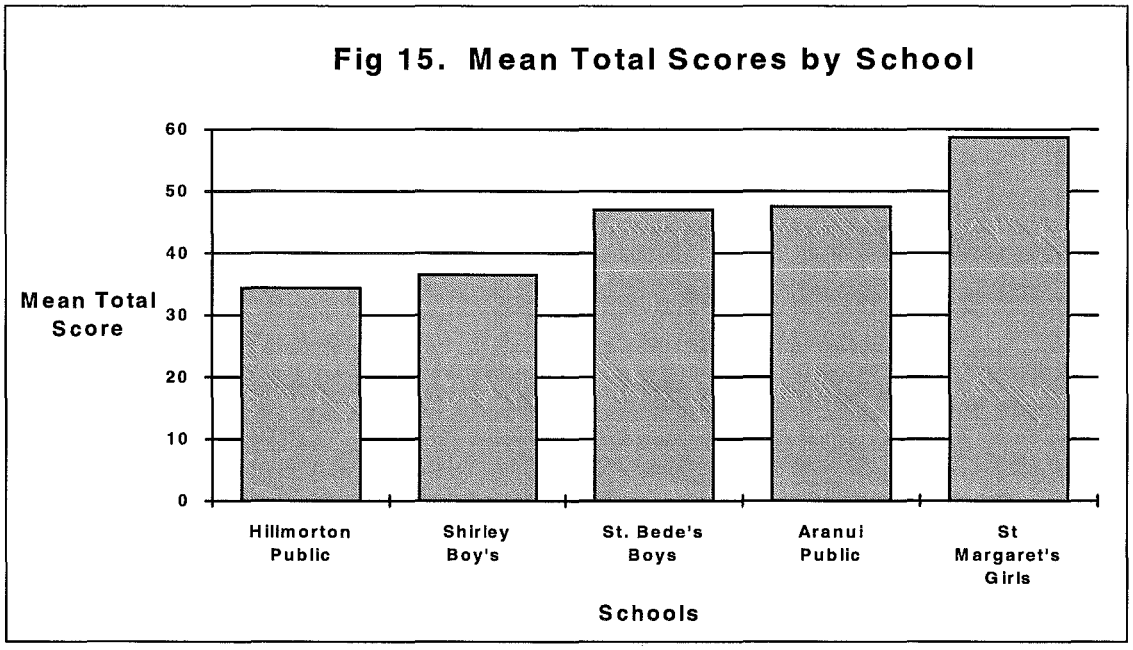


Fig 15. Mean Total Scores by School
Mean Total Score
60
50
40
30
20
10
0
Hillmorton Public
Shirley Boy's
St. Bede's Boys
Aranui Public
St Margaret's Girls
Schools

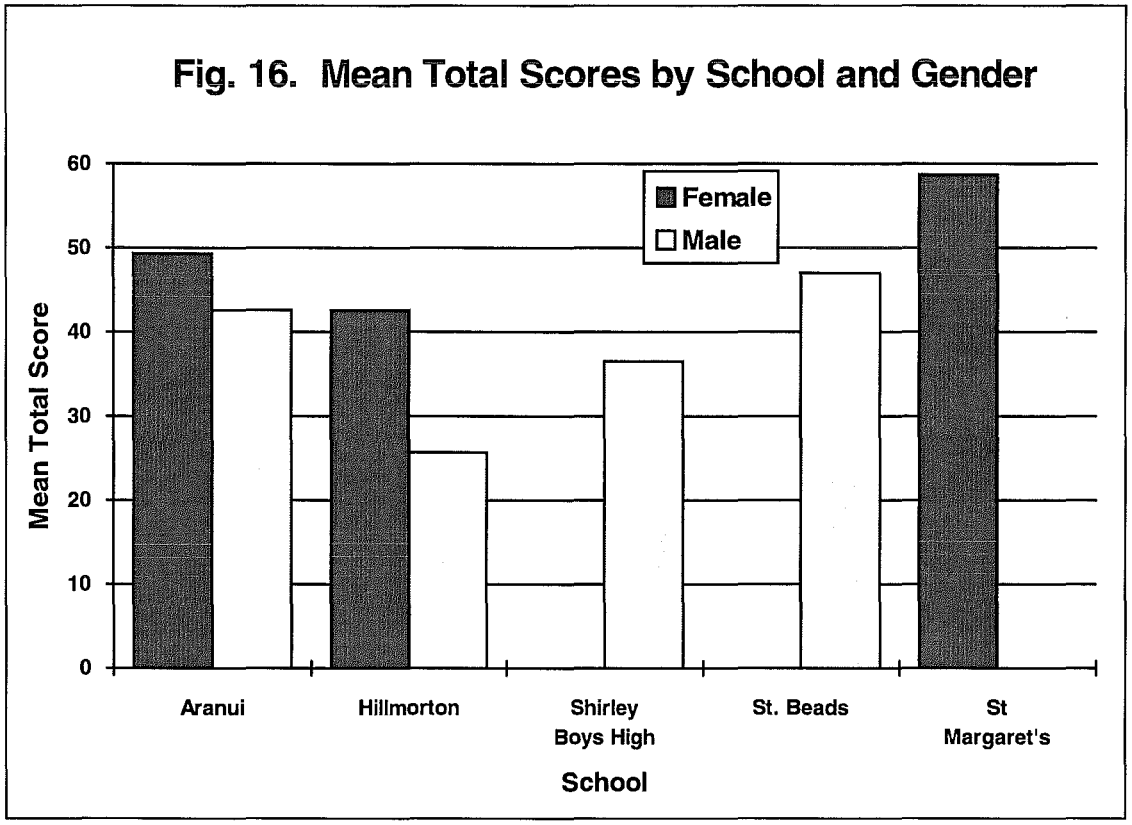
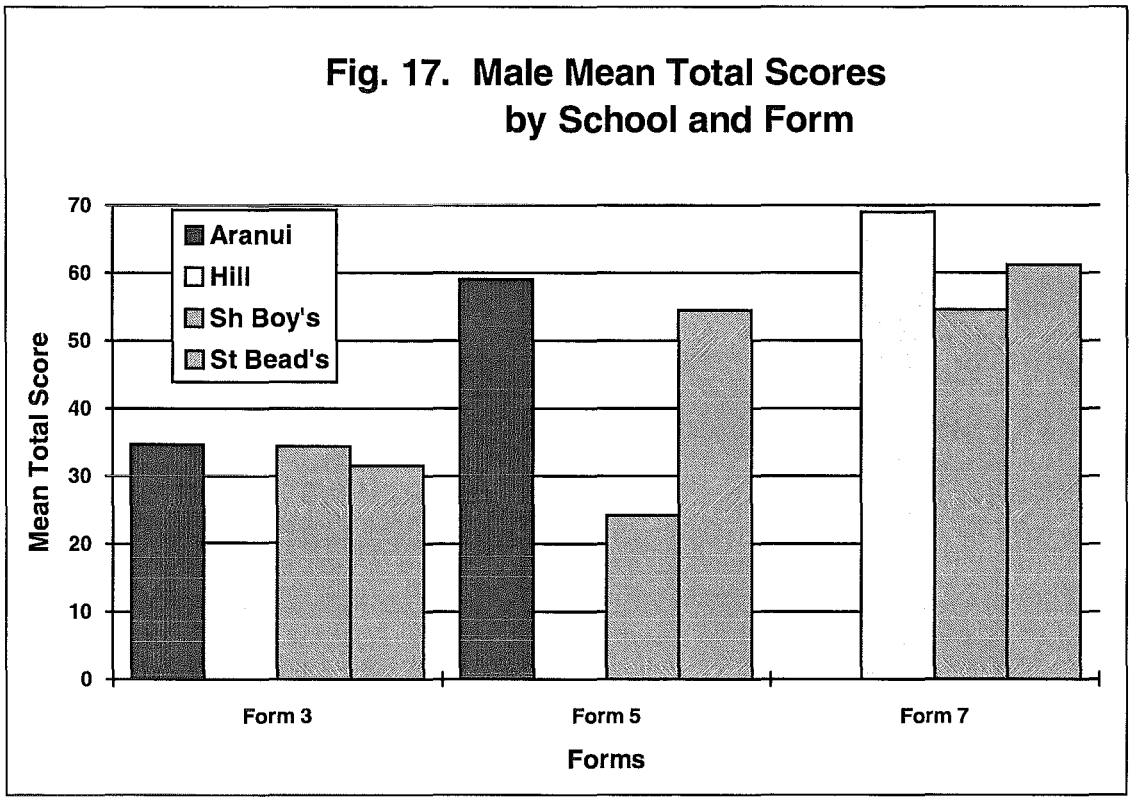


Fig. 16. Mean Total Scores by School and Gender
Female
Male
Mean Total Score
60
50
40
30
20
10
0
Aranui
Hillmorton
Shirley Boys High
St. Beads
St Margaret's
School

The scores for St Bede's males show a large increase from Form 3 to Form 5, however the scores show only a small increase from Form 5 to Form 7. The Aranui 5th Form males scored higher than any other 5th Form males or females. This further supports the previous finding that income is not a major factor in the development of emotional understanding of others in adolescence.



2-11. Distribution of Female Total Scores by School and Form

Hillmorton females (Fig. 18) showed the largest growth in total score of any female group. The Aranui 7th Form score was slightly less than the Aranui 5th Form because the 7th Form is a 'B' class only whereas the 5th Form includes both an 'A' and 'B' class. St Margaret's Form 5 shows no significant increase in average total score over Form 3. St Margaret's reported prior to the delivery of the questionnaire that their Form 5 class was below their normal standard. An alternative hypothesis would be that Form 3 was well above average.

2-12. High / Low / Mean / Total Scores by Age and Gender

The average scores of both males and females (Fig. 19) showed a continuous growth pattern. Males nearly recovered their initial deficit by age 18. Lowest scores for males were notably lower than the lowest scores for females.

2-13. MANOVA

A three way MANOVA was performed with total score as the dependent variable and gender, income and form number as independent variables. The within group factors for gender were male and female, for income (not adjusted) were low, medium and high, and for form were Forms 3, 5 and 7.

The summary of all effects showed highly significant effects for gender ($p < .0001$) and for Form ($p < .0001$). No other combination of groups produced any significant effects.

A second three way MANOVA was performed as above but with the *adjusted* income figures. The income groups low and medium were consolidated into one group and Aranui and St. Margaret's *income unknowns* were reclassified to low income and high income respectively. In addition to the gender and Form effects, a borderline significant difference ($F(1,266) = 4.53$, $p < .03$) was found for the interaction of gender and *adjusted* income (Fig. 14 above).

3. VOCABULARY SCORE ANALYSIS AND DESIRE TO LEARN MORE

3-1. Vocabulary Profile by Form

Vocabulary Profile by Form (Fig. 20) shows an age related usage of feelings words. *Total words* refers to the total number of emotion words used by the student on the questionnaire. *Unique words* refers to the total number of different emotion words used by the student on the questionnaire. Overall, the scores of total words and unique words parallel each other. In most cases the total and unique vocabulary scores for females is higher than for males with no significant exceptions. Overall, females used more unique emotion words than males used total words although the trend for both was upwards with age.

Form 3A scores showed no significant difference for either gender in either total or unique words. Form 3B scores showed highly significant differences between genders, where males scored lower than females. For Form 3B males, the total words and unique words scores were the same indicating the males gave mostly single word answers.

Form 5A scores showed more variability than Form 3A scores. Form 5B scores showed highly significant differences between genders, where males scored lower than females. Again, single word answers were given.

The pattern for the vocabulary scores shows the same features as the distribution of total scores by Form and gender discussed above. The 'B' classes appear to be very poorly equipped to understand emotions of others, thus putting them at a social disadvantage.

3-2. Distribution of Vocabulary by Race and Income

Distribution of Vocabulary by Race and Income (Fig. 21) shows the same patterns as for total scores.

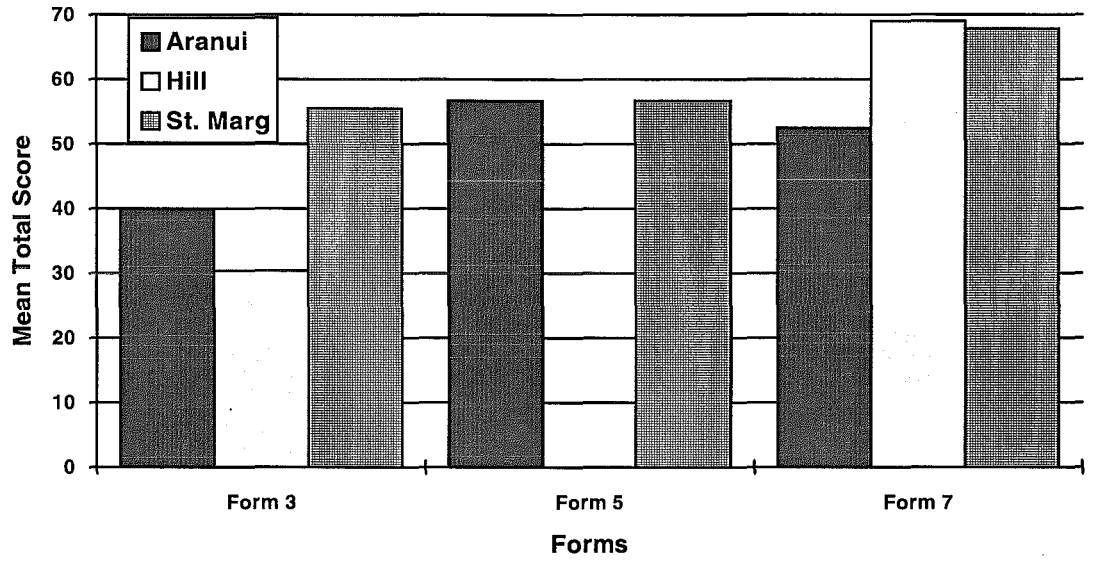
3-3. Vocabulary Profile: Max / Min / Mean

The top female used more than twice the number of feeling words as the top male and nearly twice as many unique words (Fig. 22). The average total and unique scores for females was somewhat higher than for males. The minimums for females are slightly higher than for males.

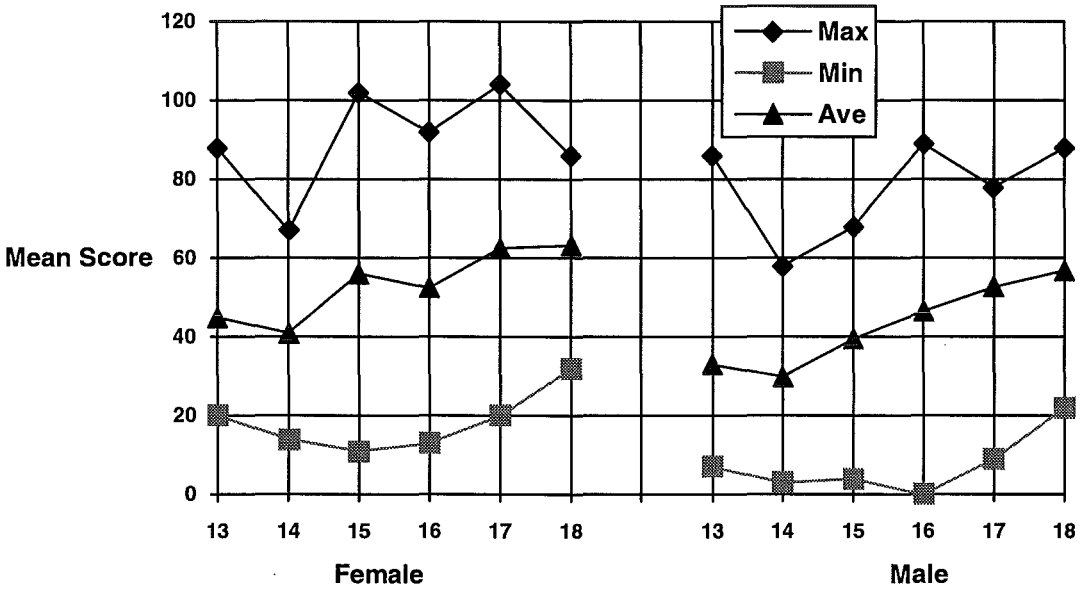
3-4. Distribution of Desire to Learn More about Emotions

Over 70 % of females and nearly 60% of males responded positively to learning more about emotions (Fig. 23). Only 16% of females and 28% of males responded negatively. About 10% of each gender were undecided.

Fig. 18. Female Mean Total Scores by School and Form



Fir. 19. High / Low / Mean Total Scores by Age and Gender



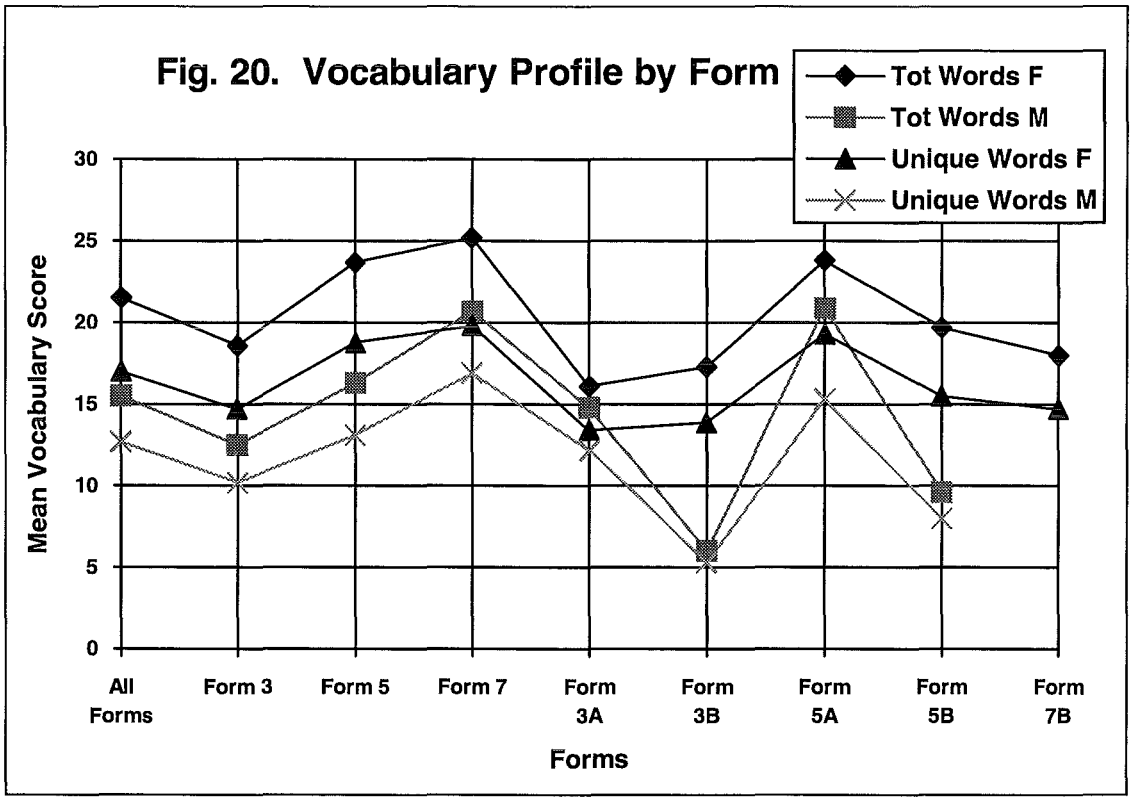


Fig. 20. Vocabulary Profile by Form
Tot Words F
Tot Words M
Unique Words F
Unique Words M
Mean Vocabulary Score
30
25
20
15
10
5
0
All Forms
Form 3
Form 5
Form 7
Form 3A
Form 3B
Form 5A
Form 5B
Form 7B
Forms

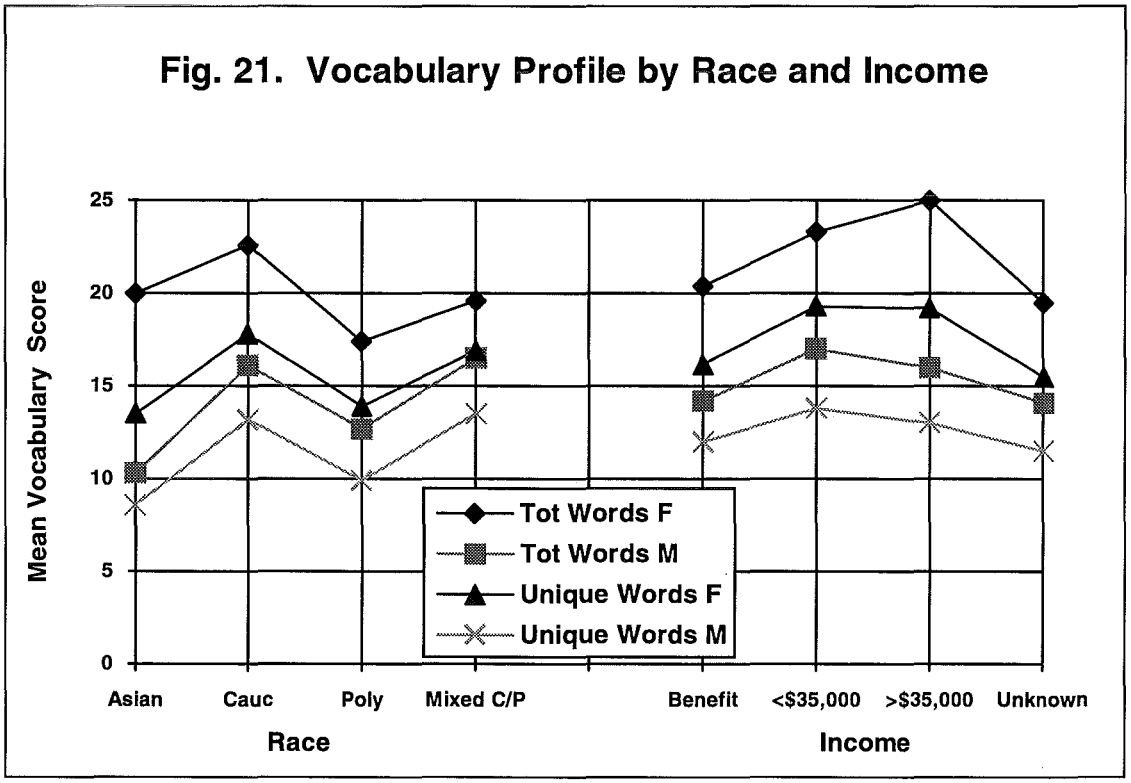


Fig. 21. Vocabulary Profile by Race and Income
Mean Vocabulary Score
25
20
15
10
5
0
Tot Words F
Tot Words M
Unique Words F
Unique Words M
Asian
Cauc
Poly
Mixed C/P
Benefit
<$35,000
>$35,000
Unknown
Race
Income

Fig. 22. Vocabulary Profile: Max / Min / Mean

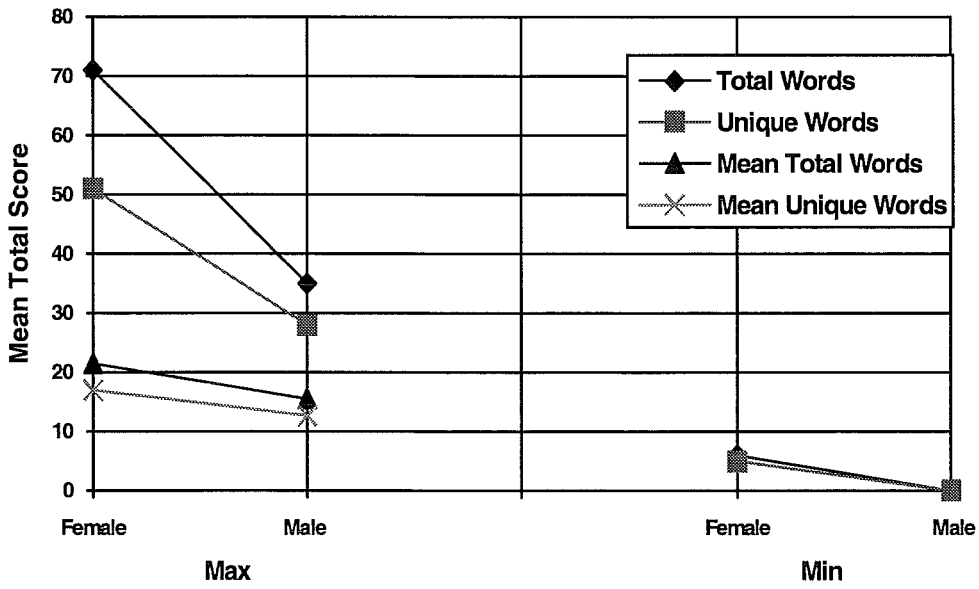
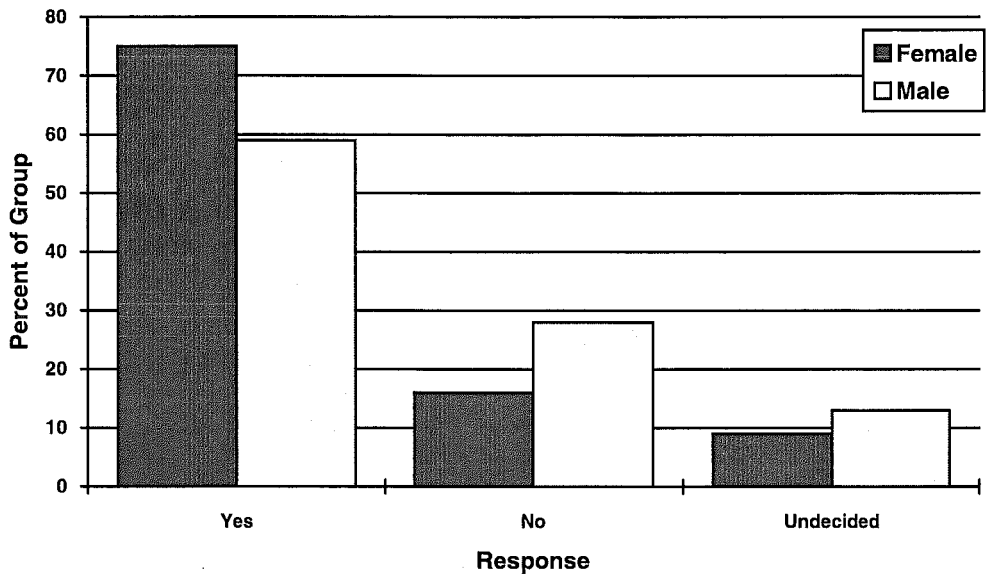


Fig. 23. Desire to Learn More about Emotions



CHAPTER FOUR

DISCUSSION

1. INTRODUCTION

This Chapter is in four parts. The first part is a qualitative look at the student's answers. Next the implications of quantitative findings will be looked at followed by a summary and conclusions. Finally, some research limitations and future directions are explored.

2. A QUALITATIVE LOOK AT THE STUDENT'S ANSWERS

Overall, a great diversity of answers were supplied by the students. Some students were wordy without saying very much while others were concise and straight to the point. Only a few confused thoughts and feelings. Some had big holes in their knowledge such as a 15 year old male who scored 43 points overall but scored them in the following order: 4, 5, 0, 5, 0, 9, 3, 6, 0, 0, 0, 0, 6, 5.

A disturbing number sexualised many answers or used swear words. A few were humorous and some told a story instead of giving the feeling word or a reason. With some notable exceptions, their grammar and spelling was for the most part very poor and their ability to express logical thought was often rudimentary. Several Asian students struggled with English as their second language, however even through this handicap, many good answers were given. Clear expression is important for good communication, especially where emotions are concerned.

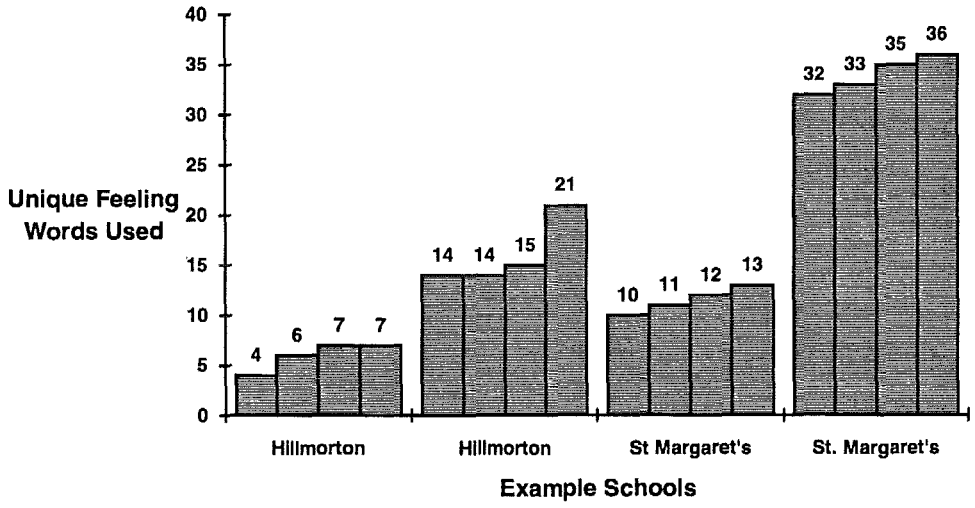
Many students demonstrated substantially less effort given to the second page of the questionnaire. Since the questionnaire only took twenty minutes to complete, this might indicate that these students don't have the patience or persistence to stay focused on emotions long enough to meaningfully communicate with a partner about feelings.

An enormous disparity in the quality of the papers is readily apparent in the graph of some Form 3 unique vocabulary scores shown in Figure 24. The within school, Form 3, top

students' to bottom students' unique vocabulary ratio, for Hillmorton was 2.7:1 and for St. Margaret's was 3.0:1. However the across school Form 3 unique vocabulary ratio comparing the top St. Margaret's and the bottom Hillmorton students was a staggering 5.7:1. The same ratio comparing Form 3 St. Margaret's top students with Hillmorton top students was still a hefty 2.1:1

Another way to look at the disparity is in terms of the number of unique feeling words used per question. At Hillmorton High School, for example, the bottom four Form 3 students (not counting ESOL students) used less than one-half of a unique feeling word per question whereas their top four classmates used about one unique feeling word per question. While at St. Margaret's (all female) the bottom four students of an admittedly select Form 3 class, used just under one unique feeling word per question and the top four students used more than two unique feeling words per question. There were 14 scenarios on the questionnaire.

Fig. 24. Form 3 Unique Vocabulary: Four Lowest and Four Highest Scores for Two Schools



2-1. Sadness, Question 6

While most students expressed the idea of sadness and loneliness, only a few students in the sample of 357 used the word grief or grieving to describe the process the woman was experiencing in Question 6. Nearly everyone overlooked the fact that a year had passed since the woman's husband had died and only a few students explicitly recognised that the passage of time might

6) A 60 year old woman's husband died a year ago. They were very close and loved each other very much. What do you think the woman is feeling and why?

alter the woman's feelings. However. a 13 year old female wrote, "*Not too bad, she wants to get on with her life. When it comes up in conversation though, she may feel sad at her lost memories.*" One or two students who picked this up decided that she'd found someone else and had finished grieving.

One student proposed that the woman might be happy because she (the grieving woman) killed him for the money in his will, while several others recognised that money could make a difference in her perception of the event. Several students also suggested during the discussion period that she might be relieved if the marriage had been unhappy or abusive. Only one reference was made to religion. A 16 year old male from an 'A' stream class wrote, "*I don't know because I am not that person or happy.*".

On a more positive note, some answers were quite insightful. One student replied that the woman was happy because she knew that her deceased husband was happy in heaven waiting for her. The highest scoring answer was from a Form 5, 16 year old female, who wrote "*Lonely because her husband has died, more independent because she has to look after herself. She could be more social because she is going out with her friends more or she could be anti-social because she wants to spend time by herself, grief and depression, and she could be finding herself sad*[1]." If all students had this degree of insight before leaving school, then the world would be a more understanding place.

2-2. Pride, Question 7

Most students responded with 'happiness', 'excitement' and many with the word 'pride'. Some cited the achievement for both self and country. One 13 year old male wrote that the athlete would be relieved that is was over. A 17 year old female summed up the situation parsimoniously when she wrote, "*Pride - for herself and her country. Excited because she is the best. Honoured - as it is rare.*"

7) An athlete has just won her first international sporting event. As she receives her gold medal, what do you think the athlete is feeling and why?

2-3. Love / Happiness, Question 8

A 16 year old male demonstrated that not all adolescents have a romantic streak when he wrote, "*The man is feeling sad. Because He wants to Go out for a surf. LiKe having a nice*

8) A man and a woman are walking on the beach together holding hands. What do you think they are both feeling and why?

[1]All italicised quotations are verbatim, unedited.

walk with her boyfriend. She's a romantic freak."

A 13 year old male, showed how this question invited projection when he responded, "*what to say next, nevess*". Although he did not see the romance, he probably revealed precisely the nervousness he would feel in that situation.

An unusual response possibly showing cultural differences was written by a 16 year old Asian male attending Form 3 (two forms behind his normal age group, English was his second language). He wrote, "*I think she feeling sad Because she first time only holding the man with her together and Walking on the beach.*" Perhaps he has never been allowed this simple pleasure.

By contrast, an 18 year old female student wrote, "*They are feeling together, close, loving, special, wanted and happy Because they are spending time with someone they like to spend time with.*" Some students, who had some knowledge of other scenarios (total scores, 50, 33, 50, 46) answered "*don't know*" to question 8. A 16 year old male from an 'A' stream class wrote, "*~~In love (yuck)~~. About promblem, or their relationship. I think this because of their body language.*"

2-4. Jealousy / envy, Question 9

9) A five year old boy watches his mother cuddle his cute 18 month old sister. She tells him to go to his room and stop taking his sister's toys. What do you think the boy is feeling towards his sister and why?

A 17 year old female wrote, "*Resentful, contempt, anger, hurt, because his sister is getting all of the attention that he used to get.*" Although she did not specifically mention jealousy, she demonstrated considerable insight . A 16 year old male 'A' stream student empathised from personal experience when he wrote"*...left out...I know what he feels like I have two sisters.*" A 13 year old female wrote a particularly insightful response, "*unloved, hatred, jealousy, envy because his mother probably treated him that way before the baby. The baby has taken his mother away from him, he wishes that the baby was still him.*"

2-5. Embarrassment, Question 10

10) A public speaker is standing in front of a large audience when he notices that his zip is open. What do you think the speaker is feeling and why?

To prove that no question is perfect, a 16 year old male wrote, "*If it happens to be the zip on his jacket, he probably wouldn't care, but if it was his trouser fly, he would feel great embaresment, because its one of those private things.*"

A 15 year old female wrote, "*Embarassed, panic and angry because his zip is undone. Everyone would know an laught and panic because his is thinking about how he is going to cover it and angry because he would blame himself for not checking it before he came out.*"

2-6. Fear, Question 11, and Anger, Question 12

Some students could not imagine why a father would perform the action in Question 11. They responded "*confused*" perhaps because the child would not know of any reason for being attacked and thus the father would be assumed to have no reason, hence he must be confused.

11) A 9 year old boy is running away from his father who is swinging a jug cord over his head and screaming at him? What do you think the boy is feeling and why?

A popular theme was the assertion that the boy had done nothing wrong, so the boy doesn't know why the father screamed at him . Many thought there was something wrong with the father, perhaps he was drunk, pressured, ignorant or angry at himself and taking his anger out on the boy.

12) And what do you think the father in number 11 (above) is feeling and why?

A 13 year old female wrote a remarkable reply, "*Frightened and afraid. He will be extremely confused. He will by crying, but trying not to because crying will slow him down. He has nowhere to run. He feels closed in, no escape. He can imagine what it is going to feel like and what he will do when it is over. He feels very small and helpless.*"

A 15 year old female wrote, "*Powerful that he has made his son sceared of him.*" The term 'powerful' implies that the student thought that the father received some perhaps sadistic pleasure from frightening his son. A 14 year old female thought the father was "*unsure on what to do*". While most students identified the boy as scared, one 15 year old 'B' stream female responded, "*staunch because he wants a fight,*" and regarding the father she wrote, "*He wants to waste the boy.*"

A 16 year old female 'B' stream student articulated a clear set of answers for Question 11 when she wrote, "*Very frightened - dosn't want to get hurt*", and for Question 12 wrote, "*Angry at his son for doing something that was naughty and thinks that hitting him with a jug cord is the best way to teach him a lesson.*" A 13 year old male responded, "*The boy is probably feeling hurt, sad and angry and love because the man's still his father.*" He continues regarding the father, "*Angry and he's probably in a rage unable to control himself.*" This student can not imagine

fearing (not loving) his father and attributes the outburst to the father's inability to control himself rather than any wrong doing by the boy.

2-7. Surprise / startle, Question 13

The most frequent responses were 'shock' and 'scared' rather than 'surprise' per se. A 15 year old male wrote, "*Startled because she suspects it is a gun shot.*" Although he recognised the emotion well, his reason was a specific imaginary event rather than the principle of unexpectedness of the situation.

13) A teenage girl is daydreaming in a hammock when she hears the loudest bang she has ever heard. What do you think the teenager is feeling and why?

Responses were not devoid of humour. A 14 year old male wrote, " *She gets such a fright that she jumps 5 meters in the air, falls down and breaks the hammock.*". A 13 year old female showed remarkable insight when she wrote' "*She got one hell of a fright. Straight away she may not have noticed, but after a second or two she will have. Now she is curious to find out the source.*"

In retrospect, the scene was perhaps too strong for 'surprise' so 'shock' was allowed as a valid answer. An 18 year old female demonstrated the point when she wrote, "*Shocked, scared, frightened because she doesn't know what it could be, scared she or someone close may get hurt or be hurt.*" A 15 year old female wrote, "*Panic, lost, angry because she does not know what is happening. Angry because she lost the nice daydream.*"

2-8. Curiosity / interest, Question 14

The same 18 rear old female above succinctly wrote, "*Feeling naughty that he is listening in, intrigued by the talking, scared he will get caught.*" She scored 86 points overall.

A 13 year old male showed a hormonal response when he wrote "*Woulden that be great with the teacher at school*".

14) A 12 year old boy hears adults talking about sex in the other room. He sits just around the corner to hear what they are saying? What do you think the boy is feeling and why?

A 13 year old 'A' stream female demonstrated a full palette of emotional insight when she wrote, "*Self-conscious, interested but disgusted at his own parents. He will feel adventurous and daring, but a little scared of being noticed. He is also embarrassed.*" A 14 year old 'A' stream male gave an archetypical male

hormonal response when he wrote, "*down stiff down because he's getting horny.*" Amazingly, these two students were in the same form and stream.

Some students posses a delightful directness. For example, a 15 year old female wrote, "*Guilt for listening, and embarassment at what they were talking about. Curiosity to know more.*" A 17 year old female raised the question about 'what is an emotion' when she wrote, "*I don't think the boy is feeling anything. He is probably just curious and wanting to know more about sex.*"

A 13 year old 'A' stream male redeemed his gender when he wrote, "*He is probably interested because he probably doesn't know too much on the subject*" and a 18 year old male wrote, "*Curiousness - wants to learn more about sex. Anticipation - may want to experiment with the information. Humour - may think the whole thing is a joke.*"

2-9. Disgust / revulsion, Question 15

The same 18 year old male summed up the situation and gave the most loving answer of all when he wrote, "*Disgust - that the baby has smeared such vulgar contents. Anger - that she has to clean it up. Forgiveness - that it is only a baby and didn't know better.*"

15) A mother finds her baby rubbing the smelly contents of its diaper all over the crib. What do you think the mother is feeling and why?

Students often projected their own lack of knowledge onto adults. For example, a 14 year old female wrote, "*Scared that she might do something wrong to hurt her baby.*" Hurting the baby during the clean up would be unlikely. An alternative interpretation of this comment could be that the student thought that the mother might hit the baby in anger. Others covered their lack of knowledge or lack of interest by facetious replies such as a 13 year old female who wrote, "*Like jumping for joy, seem it's her favourite aroma.*" Curiously, this same 13 year old female, however, answered question 9 (jealousy) by writing a solid reply, "*Rejected and jealous because he is still quite young and wouldn't fully understand.*" Yet she reverted to "*The little s__t*" for question 17 (anger).

2-10. Scorn / contempt, Question 16, and Anger, Question 17

The students found this pair of questions particularly difficult with Question 16 only rarely producing the actual words 'scorn', 'contempt' or 'disdain'. A 16 year old 'B' stream female gave no answers to either 16 or 17 while answering all other questions moderately well, achieving a total score of 47 points.

16) A principal tells an 18 year old boy to tidy up his clothes or he'll contact his parents. The boy makes a rude gesture toward the school principal turns his back and swaggers away. What do you think the boy is feeling and why?

A 13 year old male, replied "cool, but scared". This seems quite a clear description for someone who did not know the correct words. Many respondents used the word "smart".

17) And what do you think the principal in number 16 (above) is feeling and why?

A 13 year old female approached Question 16 from a different angle when she wrote, "*Embarassed because it might not be his fault that they are shabby.*" Although she appears to have missed the point, the gesture and the swagger could have been to cover the embarrassment.

A 16 year old male saw the principal's action as blackmail by a principal who hates the boy because the boy defied him. The idea that the Principal wielded an arbitrary use of power arose numerous times with a typical example being a 13 year old female who wrote, "*Probably power because he* (the principal) *can tell him what he wants when he wants.*"

The public nature of the was often hinted at but not explicitly stated and the defiance of the swagger was frequently overlooked. For example, the above 13 year old male also wrote for Question 16, "(the boy was) *probably embarrassed because he was getting told off by a principal at the age of 18"* and a 15 year old female thought that the Principal would be feeling embarrassed or ashamed.

A 14 year old Asian male demonstrated what could be a cultural difference when he wrote about the defiant boy, "*Feeling bad and want to go to somewhere quiet and think through my self.*" He then wrote about the Principal, "*Anger and try to find out to become friend again and friendly.*" He was a new immigrant.

A 15 year old male summarised the situation when he wrote, "(The boy was) *brave, rebellious as he has become smart to the principal.* (The principal is) *angry at being shown no respect and disobeyed.*" A 17 year old male showed a more subtle vocabulary when he wrote, "

(The boy is) *smug because he just stood up to the principal and in his mind he won.* (The principal is) *livid because of the total disrespect, and a little bit helpless because of the small scope of punishments available."*

2-11. Boredom, Question 18

A 17 year old 'B' stream female took an unusual tack when she wrote' "*Angry because the man is most likely lieing."* A 13 year old male agreed when he wrote, "*She feels like he is hidding something."* Other wise most students wrote that she was bored because she had heard the story before.

18) A woman is listening to a man tell her the same long winded story for the tenth time. What do you think she is feeling and why?

2-12. Guilt, Question 19

A 17 year old female wrote, "*Guilt and shame because he knows wrong from right."* Sadly, she was the only student to directly acknowledge the concept of right and wrong. For the most part, the idea of culpability was assiduously avoided by most students, leading the researcher to wonder if this upcoming generation has any conscience, whether this is an example of normal adolescence, or perhaps the question did not reflect the concept too well. A common variant of this theme was that the boy would feel annoyed and angry that he had been stupid enough to get caught rather than guilty of any wrong doing. An 18 year old female wrote, "*He doesn't care, he wants to make trouble."*

19) A mother catches a 9 year old boy doing something he knows he is not supposed to do. What do you think the boy is feeling and why?

Occasionally a respondent slam dunks the researcher with a reply like this 13 year old male who wrote, "*I don't know what he's doing so I don't know what he feels like."*

Some students when unable to find a feeling word told a story from the protagonists point of view. An example of this is a 14 year old female who wrote, "*Oh! no! What should I do! I might have to be locked in the bedroom again!"*

Another theme centred around feeling afraid of the parent. The fear theme was mostly from the younger students while defiance became more prominent for the older students. Some examples from older students were, "*annoyed because he may be punished", "dissapointed because caught", 'satisfaction for not obeying his mum," "happy, he enjoys doing what he's not supost to do,"* and *"he does his own thing because he's angry at his mum."*

Perhaps the most intriguing answer to any question was from the 15 year old female who answered this question with, "*Ironic, It seems funny. She hum's and ha's, but really she is*

observing the man, and understands him better; his mannerisms and character." Only an unusual person would cope with the long winded storyteller by developing the view point of a detached observer of the incongruity. Perhaps this student is destined to become a university professor.

2-13. Learn more? Question 20

A 15 year old Asian female for whom English was a second language wrote, "*Yes, because then you would know to approach the person or not if you do approche and you are not want too, you might get blowned up. I you can comfort the person if you know their feelings.*" Despite the obvious grammatical difficulties, she shows an understanding of purpose in learning more. She scored 90 points overall.

An 18 year old male added the comment, "*yes, but a little.*" Since he scored only 22 points, perhaps he is terrified of emotions. Another 17 year old male (46 points) showed where his priorities lay when he wrote, "*No, because I have other things I must learn instead.*" A fifteen year old male wanted to learn more about the feelings of others but only "*some more positive feelings.*" A 13 year old male summed up the feelings of a segment of the population who did not want to learn more when he wrote the word "*NO*" in three inch letters.

3. IMPLICATIONS OF QUANTITATIVE FINDINGS.

The total scores were a better measure of the student's abilities. Total scores were more normally distributed and accounted for reasoning as well as lexical skills. The lexical skills, referred to in Harris et al (1987), showed a wide variability with some students using their lexical skills to portray more complex emotions such as forgiveness, self-conscious or even livid. Other students demonstrated a shortage of lexical skills and / or willingness to write them down.

The peaked nature of the two vocabulary measures is understandable. The vocabulary terms used was likely a function of knowledge and participative effort. Both of these factors would tend to limit the higher scores

The A PRIORI hypotheses for this study were that for adolescents:

3-1. Hyp. 1: The general level of PEK is low.

The discussion in section 2-1 in the Results (Chapter 3) shows that the general level of PEK was, in this author's opinion quite low. Only 16% scored over 65 points and only 5% scored over 80 points. The sample questionnaires in Appendix 1 show how easy 65 points would

be to obtain. The overall mean score of 45 points required naming one preferred emotion and giving one plausible (not preferred) reason. This seems to be bordering on a trivial understanding of the emotions of others.

3-2. Hyp. 2: Female PEK is greater than male PEK.

Females consistently out performed males across all dimensions studied. This is at variance with studies cited in the Introduction (Chapter 1). Fabes et al (1988), Dore & Kirouac (1985), Frodi, Macaulay & Thome (1977, cited in Fabes) and Cole (1986, cited in Fabes) all found no significant gender differences. There are at least three possible explanations for this.

First, they (except Dore and Kirouac) all studied children and the present study focused exclusively on adolescents. Perhaps puberty marks the onset of gender differences in this area. Second, they all studied capacities to perform certain skills whereas the present study tapped their ability to apply their capacities to specific situations. Third, they worked with very rudimentary lexical and reasoning skills whereas the present study required more sophisticated integration of lexical and reasoning skills and knowledge.

3-3. Hyp. 3: Younger persons have lower PEK than older.

On the whole, younger students showed lower PEK than older students. This is not surprising given that emotional understanding of others require requires considerable cognitive skills as well as considerable social experience, both of which would be expected to grow substantially during adolescence. There were some notable exceptions. This result is in agreement with Gnepp (1987).

One notable exception, mentioned in Part 2 of this chapter was the remarkable abilities of the Form 3 St. Margaret's females, who out performed all other Form 3 and Form 5 Students, as well as the Aranui Form 7 Students. St. Margaret's Form 3 also scored only 19% less than Form 7 students in both Hillmorton and St, Margaret's, the two best Form 7 classes.

Still, the Form 7 students generally out performed the earlier Forms although there seemed to be some levelling off of scores by the older students which was probably a limitation of the questionnaire time and space restrictions.

3-4...Hyp. 4: Students from higher income families have a greater PEK than students from lower income families.

The paucity and unreliability of the income estimates by the students was unfortunate but predictable. Specific figures regarding income are unlikely to be shared with adolescents many reasons. Obtaining accurate information on family incomes would be difficult to obtain even from many adults.

However, given both the raw and the adjusted income data yielded no significant disparities in total scores for income groups, the hypothesis that students from higher income families have a greater PEK than students from lower income families, decidedly fails.

Males from high income families were no better off than either beneficiary or middle income families. Although females from middle and higher income families were somewhat better off than females from beneficiary families, the difference was not significant. Therefore, emotional maturity, as measured by this questionnaire, seems to be a great leveller among socio-economic groups. This would explain why some highly successful businessmen, such as Sir Robert Jones, are able to rise from rags to riches. His two primary qualities were salesmanship and a methodical approach (Jones, 1977).

This is consistent with a recent publication of Daniel Goleman (1995, cited in Time Magazine, 2 October, 1995) on *Emotional Intelligence.* Goleman believes that emotional intelligence is a major factor in success and that emotional intelligence does not necessarily imply a high IQ. Emotional intelligence does indicate drive, networking ability, collaborative skills and the ability to 'read' people and situations. Certainly, the emotional understanding of others is part of a person's emotional intelligence.

3-5. Hyp. 5: Maori and Polynesian students have a greater understanding than other ethnic groups.

This hypothesis was not supported by the results of this questionnaire. Both the Maori and Polynesian and combined groups achieved significantly lower scores than the Caucasians in the sample. The reasons for this are not apparent from the questionnaires.

3-6. Hyp. 6: Private school students have greater PEK than integrated schools and integrated school students have greater PEK than public school students.

Mean total scores by school were, in descending order, private (59), public (48), integrated (47), integrated (36), public (34). Unfortunately, the desired private male school desired was unable to spare the time in its schedule to participate in survey.

As noted before, the lowest scoring public school (34) provided a Form 4 class in place of their Form 5 class. Due to large age related increase in scores, then this public school would show a lower score due that alone. Adjusting that public school scores for having a Form 4 instead of a Form 5, raises the school's mean upward by 7% to 36 which is equal to the lowest integrated school. Thus each integrated school had an almost identical comparable score to a public school, ruling out any noticeable differences between integrated and public schools.

Both of the integrated schools were single sex male schools. Since males performed consistently lower than females overall, then the integrated schools would be expected to perform less well than a private female school based on gender alone. And certainly no conclusion can be drawn from this data as to whether or not the apparent private school advantage is due to the school's selection criteria for students. St. Margaret's has a very active life skill programme with one teacher dedicated to the task. This could have been another factor in their high score.

3-7. Hyp. 7: The general interest in learning more about emotions would be low, but females would be more interested in learning more about PEK than males.

Both males (59%) and females (73%) replied overwhelmingly in favour of learning more about emotions, contrary to the hypothesis. For the 'No' response, males (28%) were more emphatic than females (13%). Although some were emphatically against learning more about emotions, most females (82%) and males (71%) were either in favour or undecided, indicating a substantial portion of high school students would be open to developing their skills in this area.

This result indicates that training programs, if designed correctly, could be effective in improving the student's skills, across the board. Referring again to the Time article (above), New York City Public School 75 principal Roberta Kirshbaum, reports that instituted an emotional literacy program for students to "learn to manage anger, frustration and loneliness. Since then, fights at lunchtime have decreased from tow or three a day to almost none." In a school where students sometimes murder each other, this is a dramatic improvement.

The present study demonstrates that New Zealand high school students are, for the most part, emotionally illiterate. And we wonder why we have the highest male teen suicide rate in the western world. Incisively, this result on their willingness to learn, places the onus on adults to teach children and adolescents about emotions, both their own and the emotions of others.

3-8. Hyp. 8: Streaming in schools distinguishes between levels of PEK such that 'A' streams have greater PEK than 'B' streams.

The difference between 'A' stream students and 'B' stream students was highly significant with 'A' stream students far out scoring 'B' stream students. As stated in the Chapter 3 (Results) section 2-5, by extrapolation, the Form 7 'B' students would have, at best, performed at the level of the average pre-pubescent teenager. However performed, the selection of students for 'B' stream seems to select for students with extreme difficulties in understanding the emotions of others.

Given the cognitive complexity discussed in the Introduction, the 'B' stream result supports the idea that the questionnaire was simply a test of cognitive ability and had nothing to do with emotions at all. Looking deeper, an examination of the distribution tails reveals that of the 30 students with the lowest scores (< -1.5 std dev) there were 4 females and 26 males. In that same distribution there were 3 'A' stream, 12 'B' stream and 15 mixed stream students. In the Aranui 'B' stream, 2 Form 3 females scored over 50 points and 5 'B' stream Form 5 females scored between 52 and 65 points. These results indicate the possibility that the males seriously depressed the 'B' stream scores so that what appeared to be a purely cognitive difference is at least in part a gender difference.

The other end of the distribution reveals that of the 20 students with the highest scores (> 1.5 std dev) 8 were male and 14 were female. This result is at variance with the common observation that males tend to be more prevalent at both tails of performance distributions while females are more central. This demonstrates how consistently the females outscored the males throughout the distribution of total scores.

3-9. Hyp. 9: Emotional vocabulary scores follow the same trends as total questionnaire scores.

The emotional vocabulary scores followed the same general trends as the total questionnaire scores. Again the 'B' stream males performed very poorly. AS stated earlier, the

vocabulary distributions were skewed left and kurtotic in nature and seem to be an inferior measure of the students ability to understand the emotions of others.

Gnepp (1987) also found that most children, increasingly so with age, can consider more than one emotion in their inference but often they don't, that is, they stop after grasping one possibility. This was certainly a possibility in the present study where some answers were very clear but uni-dimensional. The clarity of the answer suggests that more knowledge could have been present but was not given either because the knowledge was not asked for or the student was not fully engaged in the responding process.

3-10. Observations on differences in schools

Comparing schools is difficult using the sample from the present study. With academic streaming in two schools made the samples not very comparable across schools. Therefore only general observations can be made.

Grammar

The most striking observation about St. Margaret's private Girls School is that virtually all respondents wrote their answers in grammatically correct and complete sentences. Sometimes the content was wordy for what was said but often there were razor sharp observations. Question 7 (Pride) provides a good example of three different styles of reply. A 14 year old female from St. Margaret's wrote, "*She will be happy, relieved and proud of herself because of all the work she will have put into it.*" This shows three distinct emotions plus the effort of achievement and remarkable grammar. She identified the concept of relief which was rarely expressed by anyone.

In contrast an insightful but grammatically less sophisticated answer was provided by a 13 year old female from Hillmorton High School who wrote, "*Proud, happy, because she has won something big.*" This response shows a much simpler expression, yet is insightful.

A 13 year old B stream female from Aranui High School, wrote, "*She probably feels proud and like she's achieved something.*" This respondent's answer is very clear and expresses the essential emotion and the essential reason, but is very different in grammatical structure. By Form 7, however, students in all schools showed comparably sophisticated expressive skills, except for the Form 7 'B' students.

Causal relations

Another striking feature of St Margaret's is the clarity of their knowledge of causal relations for emotions and the multiplicity of viewpoints the students expressed. This was more noticeable in the lower forms, with Form 7 replies very similar across all schools. Hillmorton High School showed a wide variety of answers. In the third form there were noticeably many one word answers with out reasons as was true at Aranui High School. Again, by Form 7, students in all schools showed comparably sophisticated expressive skills, except for the Form 7 'B' students.

4. SUMMARY AND CONCLUSIONS

The total score data was the most normally distributed hence was a better measure of the emotional understanding of others that either of the two vocabulary scores.

Income data was probably quite unreliable. A large percentage of adolescents (39%) answered the income question with unknown. Adjusting the data by known socio-economic districts did not change the results. There were no income differences in the total scores.

Race effects were difficult to assess due to the small number of non-Caucasian students in the sample. Another difficulty with race was that the cultural, ie script, differences were not selected by the race question. The third difficulty was that a sizeable proportion of non-Caucasians were not proficient in the English language. Never the less, overall, Caucasians scored highest on the questionnaire. The questionnaire could have had a Caucasian bias. However, proportionately, non-Caucasians received as many top scores as Caucasians and non-Caucasians were over-represented in the bottom end of the distribution.

Form levels 3, 5 and 7 were the best groupings for data analysis. The Form levels grouped social peers better than age groupings. As expected, overall scores improved with the increased age of the students. Interestingly, 13, 15 16 and 17 year olds were proportionally well represented in the top end of the scores. Not until age 17, did the proportion of high scorers increase dramatically, presumably do the attrition of the 'B' stream students leaving schools having mixed (non-streamed) students. A surprising number of 15 and 16 year old students were in the bottom end group.

Both the top end and bottom end distributions exhibited a stable proportion of students through out the various ages, suggesting two possibilities. First, that both those who do not understanding anything about the emotions of others remain ignorant throughout their high school years until they drop out. Second, that those who know a lot about the emotions of others,

learn these skills before or about the age of 13 and retain their superior skills until other superior student catch up by age 17 or 18.

Females of all ages out performed males on this questionnaire. Males were over represented at the bottom end and under represented at the top end. Male total scores, total vocabulary scores and unique vocabulary scores were lower than females for all Forms, ages, incomes and race distributions. The cause of this is debateable. Whether the gender effect is due to superior cognitive skills of females, the more social orientation of females or for some other reason is not clear.

The questionnaire appears to have been too lengthy for many students. However, their lack of attention span on the subject is a significant result in itself. This lack of persistence does not bode well for their handling future more complex emotional situations.

The results of academically streamed demonstrated that the selection process for 'B' stream assignment was a good indicator of students with poor understanding of the emotions of others.

Interest in learning more about the understanding of the emotions of others was higher than expected. This puts the onus on the parents and teachers to provide learning environments for adolescents who have shown a willingness to learn more than they currently know.

Finally, training is sorely needed for the students. Student training also requires training programs for parents and teachers. The overall scores on the questionnaire were frightfully low, showing manifest ignorance of this important developmental area. Most schools not adequately preparing their students for adult emotional life, although those that are making efforts in this most difficult area should be commended and encouraged.

This training need not be particularly formal. As emotional scripts emerge in everyday school life from the school yard, the classroom, books and assignments the understanding of the emotional states of the characters involved can be smoothly woven in. Some lexical and causal training in a formal sense may be useful to ensure a more complete understanding of the emotions of others.

As for those who believe that clever people will misuse this knowledge to manipulate and control others so therefore should not be taught, consider this. Advertising, politicians, religious leaders and school teachers already use many forms of emotional coercion on the often

unsuspecting public. The only way these practices can survive is due to the ignorance of the consumers. Any tool can be used for good or bad, but when the innocent are ignorant, then the way is paved for tyranny, manipulation and suffering.

5. RESEARCH LIMITATIONS AND FUTURE DIRECTIONS

Exploratory studies are limited by their nature. Most needed improvement focus on three areas, namely improving the questionnaire, selecting a somewhat different sample of schools and further work into students at the top and bottom end of the distribution. Each will be discussed in turn and in terms of future directions.

5-1. Questionnaire improvements

Demographics

Income and age could be dropped in a repeat administration of the questionnaire and race could be modified. The income data was too unreliable to be particularly meaningful and would be too difficult to accurately obtain from adolescents.

Age could be dropped because, as noted in a previous discussion, Form groups constitute more of a social peer group than age. For example Form 3 has 13 and 14 year olds, Form 4 has 14 and 15 year olds, etc. Form boundaries also provided more consistent results.

The race data was also difficult to interpret for several reasons. First, the numbers of students was small. The study would need to be repeated in the North Island where there are more students of Maori descent.

Second, most, if not all Maori students would come from a family with some degree of mixed race background. Some consider themselves Caucasian and others consider themselves Maori, making the distinction different.

Third, regardless of which way they regard themselves, the family may embrace one of the other cultures or a mixture of cultures as the norm. If the effects on the students were more cultural rather than biologically racial, then determining the cultural orientation of the family may be more revealing than asking the person their race. Separating race from cultural factors would be even more challenging.

Fourth, Polynesians come from a variety of cultural backgrounds, for example, Tongan and Samoan, Polynesians may be recent immigrants as well and thus may have a poor command of English language as observed in the Asian sample. In these cases, poor English does not necessarily imply poor understanding of the emotions of others. In these cases a verbal interview technique may be better than a written questionnaire.

Tiredness factor

The tiredness factor was clearly evident in the 'Scores by Question' graph (Fig. 7) in spite of the more difficult later questions (14 - 17) and in spite of the lack of available points from some other Page 2 questions (18 - 19).

Two compensating techniques could have been used. First, and foremost, the questionnaire could have been shorter, probably only six questions with more space for responses. The graph of 'Scores by Question' shows a rapid drop off in scores after Question 11 which was the sixth question. Second, in spite of coding difficulties, randomisation of the questions would have been worth while. The use of both of these strategies would have virtually eliminated this factor.

Sex

Once some students saw even a hint of sexual overtones, for example, Question 8 (Love / happiness), all subsequent answers took on sexual overtones. In the future this type of question would be listed last, changed to focus on happiness aspect such as a birthday present, or even eliminated.

Question wording

The wording of several questions could be clarified as follows: (a sample revised questionnaire follows this verbal description)

Question 6. Change death to 'recently' in stead of 'one year' ago to clarify the early stage of grief process.

Question 8. Add the phrase, 'smiling at each other', to clarify this was a love relationship and they were together because they wanted to be together.

Question 9. A problem occurred when there were two or more characters in the scene and the question asked for how one of them was feeling. Inevitably, some students responded with

feelings for the wrong character. Question 9 had three characters. The question asked how the boy felt toward his sister. Wrong character answers were given for how the mother was feeling toward the boy (angry); how the boy felt toward his mother(angry), and how the boy felt in the room alone (lonely). In future questionnaires of this type, I would attempt to use situations with as few characters as possible, highlight the identity of the character in question and remind the students to read the questions carefully to determine whose feelings are being sought. Similar problems arose with questions 18 and 19.

Question 10. Change the word 'zip' to 'trouser zip' to clarify.

Questions 11. Reword this question to read, 'A person is being chased by a large angry dog' to focus more clearly on the fear response.

Question 12. Reword this question to read, 'A 16 year old girl had her boyfriend 'stolen' by her best friend'.

Question 13. Change the phrase, 'hears the loudest bang she ever heard' to 'a friend sneaks up behind her and claps his hands loudly together'. This would suggest more of the quality of startle, surprise and astonish than the fear and shock of the previous wording.

Question 15. Reword to 'A boy accidentally falls into a wagon load of horse manure'. This is a simpler situation providing the same purpose of disgust.

Question 16 and 17. Drop these two questions. They are too hard.

Question 18. Drop the question, too easy.

Question selection

To restrict the questionnaire to only 6 questions would require deleting eight questions. This researcher would lean toward retaining the revised versions of the Questions on sadness (6), embarrassment (10), fear (11), anger (12), startle (13) and guilt (19). Curiosity, Scorn and Disgust would be dropped. Curiosity / interest and scorn / contempt appear to be too subtle for adolescents and Disgust is difficult to portray in its singular experience. Pride, love / happiness and jealousy would also be dropped. Pride was too easy and love was too easily sexualised and happiness was easily recognised. Jealousy would be difficult to portray with only two characters and three characters were too many. The revised questionnaire scenarios (previous question numbers in parentheses) would then be as in Figure 25.

Fig. 25. Revised Questionnaire

1. (6) A 60 year old woman's husband died recently. They were very close and loved each other very much.

2 (10) A public speaker is standing in front of a large audience when he notices that his trouser zip is open.

3. (11) A small girl is being chased by a large angry dog.

4. (12) A 16 year old girl had her boyfriend 'stolen' by her best friend.

5. (13) A teenage girl is daydreaming in a hammock when a friend sneaks up behind her and claps his hands together loudly.

6. (19) A mother catches a 9 year old boy doing something he knows he is not supposed to do.

There is an inherent difficulty in producing scenarios that consistently produce only one emotion across age, gender and racial dimensions. The emotional response depends upon the attributions of the observer to determine which emotion is experienced.

For example, a person whose partner has recently suicided may feel rage at being left alone to cope with the children, terror at coping without the partner and sorrow at the loss of a loved one whom they could not help. Another person might react to the situation very differently if, for example, the couple was divorced and there had been ugly custody battles. In this case, the surviving partner may feel pleased to be left to cope with the children alone, unperturbed about coping having coped for several years and ecstatic that another, hopefully more satisfying, relationship may now be pursued.

5-2. School samples

School sample improvements fall into three categories, namely Public vs Private, Forms tested, and academic streaming. Each is discussed in turn.

Public vs. Private

To compare public vs private schools, more private schools needed representation. An interesting study would be to compare two public schools, two private boys schools and two private girls schools. Then the gender differences could be factored into the equation more clearly.

Forms tested

Stricter criteria were needed for selecting the Forms tested. Although Hillmorton High School was generous in providing a Form 4 class as a substitute for an unavailable Form 5 class, the data was not useable for any comparisons and worse, made comparing the schools too difficult because Form 5 data was not available in both public schools. Visiting the school earlier in the year may have provided more opportunity to return for the Form 5 data on another day.

Also, Aranui High School's Form 7 'A' stream class was unavailable due to a special exam tutorial. This meant that only a Form 7 'B' class represented the top end of the potential scoring scale for that school, significantly depressing the overall school score. This was not the school's fault. The researcher should have made arrangements to visit the school earlier in the school year.

Streaming

This researcher did not appreciate the magnitude of the difference between streams. Therefore Shirley Boys High was not asked to provide a Form 3 'B' class or a Form 5 'A' class. This negated the opportunity for comparing streaming between Shirley and Aranui, which would have been interesting. A future study to study the effects of streaming could be revealing. Ideally, two streamed public high schools, two streamed private boy's schools and two streamed private girls' schools would make a good sample. The sample should contain Forms 3, 5, and 7 for both 'A' and 'B' streams.

5-3. Other future directions

Bottom end students

Research needs to be done into how 'B' stream students are selected and the demographics of this group. The 'A' stream students all seem to attain similar skill levels, as measured by this questionnaire, by age 18 regardless of public, private or integrated schooling. However, the 'B' stream students never catch up and are at a serious disadvantage throughout their school years. Presumably this deficit continues into their adult lives as well.

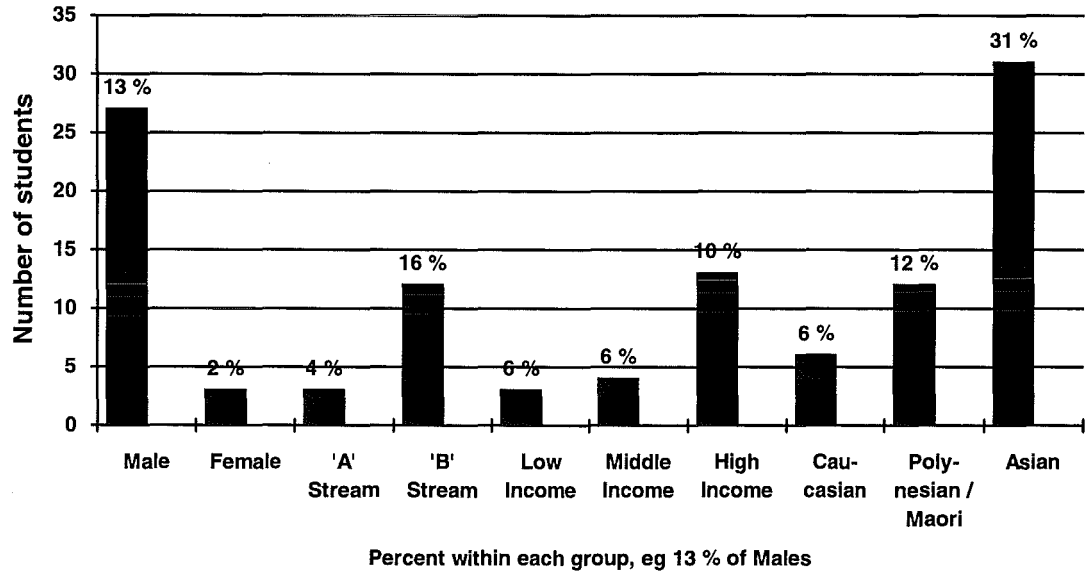
The demographics of the low score students are shown in Figure 26. Male students, high income students and Polynesian and Asian groups were most highly represented. This profile would likely be the initial target groups for training.

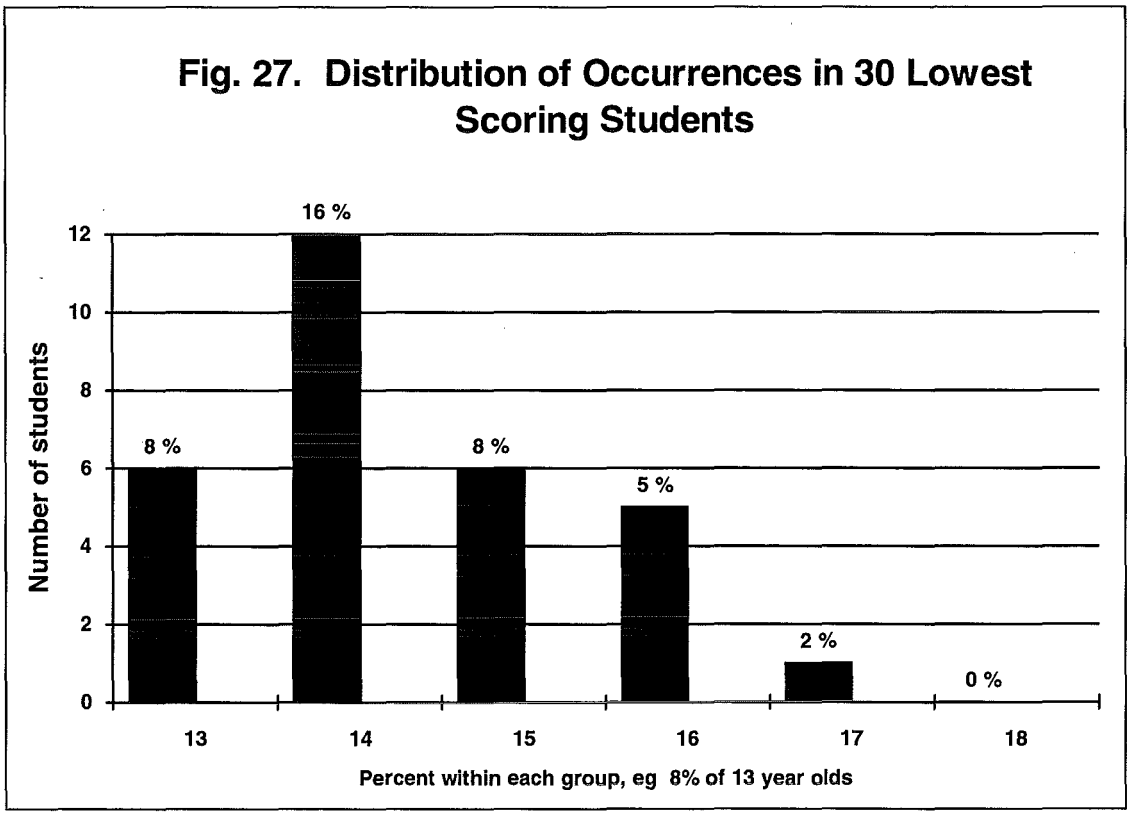
The preponderance of males in the lowest scoring group fits the general findings that males do less well than females when trying to understand the emotions of others. However, the fact that 90% of the lowest 8% of students are males is noteworthy, if not downright disturbing. A longitudinal study, following these bottom end students in terms of delinquency, marital and / or parenting difficulties would be useful.

The high number of high income students is surprising. Other income data shows a flat distribution of scores across income, however, there is a cluster at the bottom end. Perhaps their parents are too busy earning money and playing with the expensive toys money can buy to spend time talking about feelings. Or perhaps many emotional situations are avoided by throwing money at the problem.

Figure 27 shows that the age range of these bottom students is surprisingly broad. No appreciable drop off occurs until age 16. Presumably the cause for this is that these bottom end students have left school at the school leaving age of 16 (at the time of this study). If this is true, then there is a core group that goes through school without ever learning any of the skills for understanding the emotions of others, or they could care less.

Fig. 26. Distribution of Occurrences in 30 Lowest Scoring Students



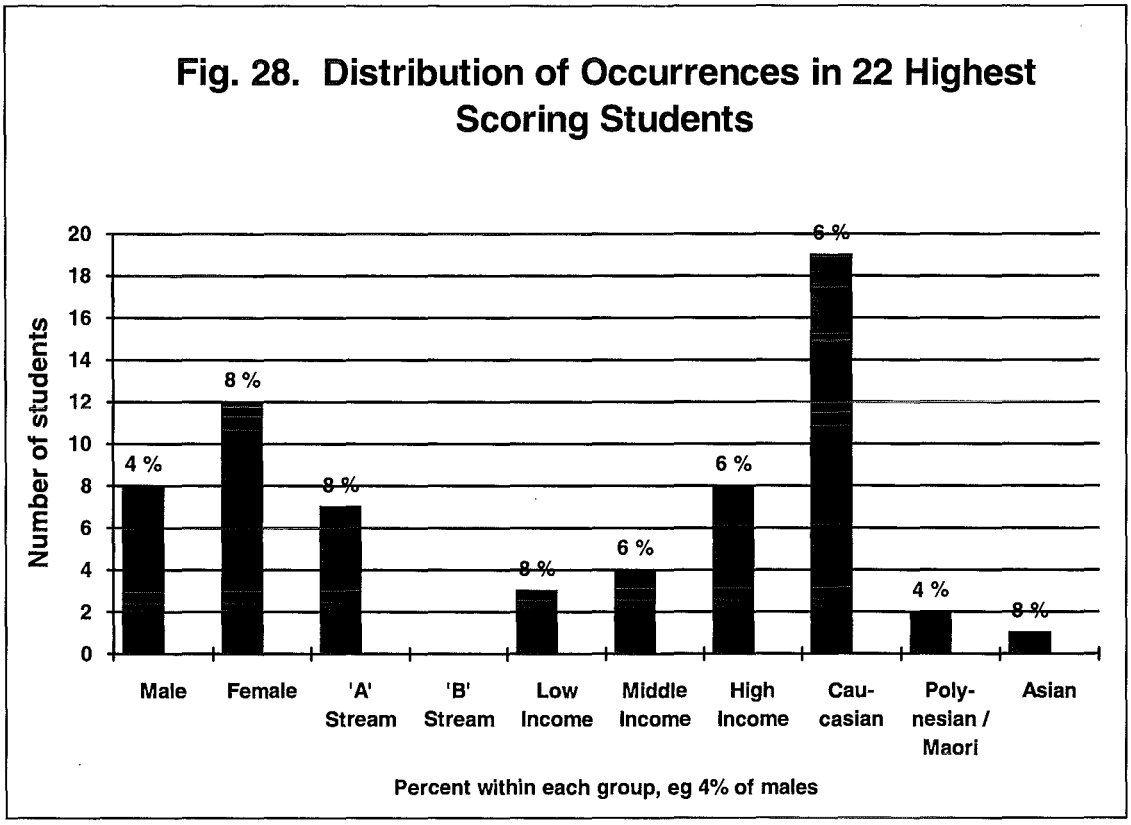


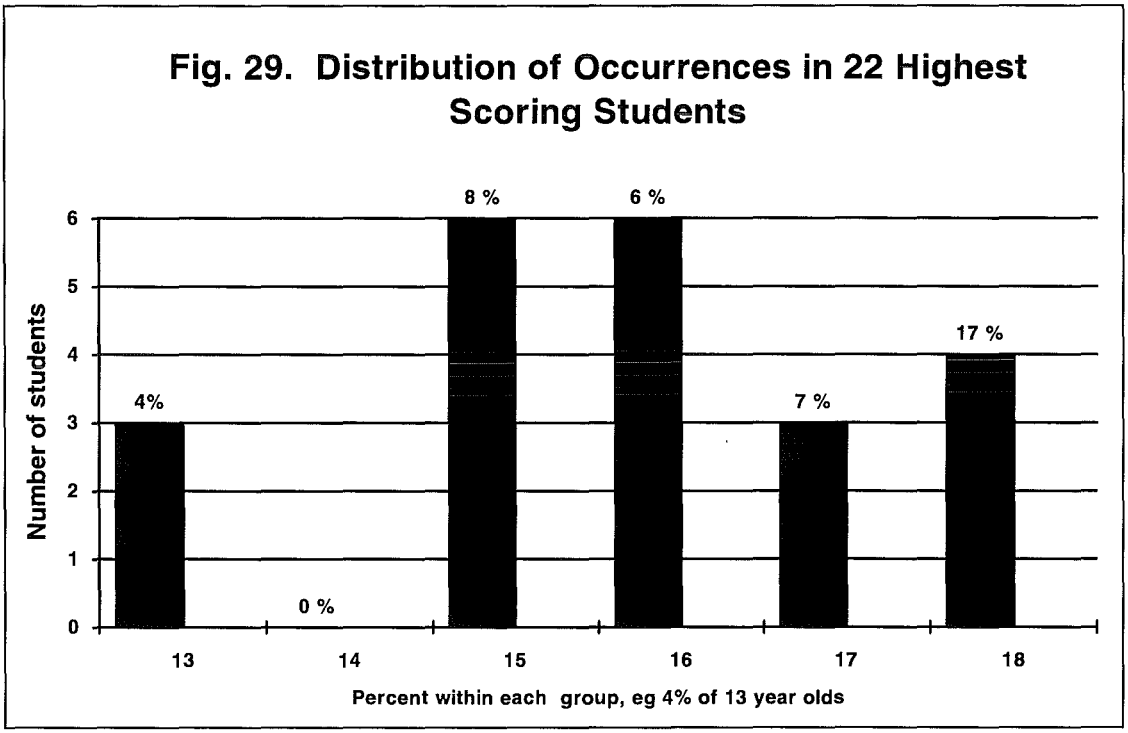
Top end students

The parallel graphs for the students scoring > 1.5 std dev above the mean (Figure 28 & Figure 29) show a different pattern. Females were more prevalent than males but not to the same extreme as the reverse in the bottom group. No 'B' stream students achieved the top group. Surprisingly, both the low income and Asian groups had the highest proportional representation in the top group. The Asian score may be an artefact due to small numbers (13) however the beneficiaries had adequate numbers (37). This supports the conclusion that income is not a factor in the understanding of the emotion of others. The addition of an all boys private high school in the sample might change the balance.

Age differences for the top students show some surprising facets. A sizeable proportion of 13 year olds (4%) achieved this group. Equally surprising, the age 15, 16 and 17 groups all had almost equal proportions in the top group, showing some age independence in the awareness of the emotions of others. Only the 18 year olds achieved a substantially higher

proportional representation. The 18 year old group would be mostly bursary students, with proven verbal expressive skills.





Training

Some final words on training. Development and implementation of emotional literacy programs is sorely needed. A study of how the top students learned so much about emotions would be useful. A study on the emotional lives of the bottom end students would also be useful. A review of the literature on implementations of emotional literacy programs and their applicability to understanding the emotions of others would be a start. An attempt a some sort of buddy system where the knowledgable help the less able would be interesting to explore.

The participants in the training programs would include students, teachers and parents. The content of the training programs would need to include scripts, cultural values, lexical development for emotion terms, experiential learning as well as textbook learning.

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APPENDIX 1

Questionnaire, administration and scoring

QUESTIONNAIRE: ***SECTION 1 General Information***

This section asks for some general information about you so we can learn how your opinions compare with those of other people. ALL questions on this questionnaire are VOLUNTARY. Answering a question implies your CONSENT to use that information in my psychological research. Thank you for your participation.

Please circle the number which best describes you.

1) What is your gender?

1...Female
2...Male

2) How old are you now?

0...10 or if younger put exact age____
1...11
2...12
3...13
4...14
5...15
6...16
7...17
8...18 or older put exact age____

3) Which income group best describes total income before tax for the past year of all family members living at your address?

1...Beneficiary. (low income) Includes unemployment benefit, widows benefit, sickness benefit, student allowance etc.
2...Under $35,000 (middle income)
3...Over $35,000 (high income)
4 Don't know.

4) What form are you are you in?

1...Form 3
2...Form 4
3...Form 5
4...Form 6
5...Form 7

5) Which group do you belong to?

1...Asian
2...Caucasian (Pakeha, European, White)
3...Polynesian (Maori, Pacific Island, etc.)
4...Other _____

QUESTIONNAIRE: ***SECTION 2 What do other people feel?***

Please write down your ideas about the following situations. Be brief. Use the back of the sheet if you want to write more than will fit in the space.

6) A 60 year old woman's husband died a year ago. They were very close and loved each other very much. What do you think the woman is feeling and why?

7) An athlete has just won her first international sporting event. As she receives her gold medal, what do you think the athlete is feeling and why?

8) A man and a woman are walking on the beach together holding hands. What do you think they are both feeling and why?

9) A five year old boy watches his mother cuddle his cute 18 month old sister. She tells him to go to his room and stop taking his sister's toys. What do you think the boy is feeling towards his sister and why?

10) A public speaker is standing in front of a large audience when he notices that his zip is open. What do you think the speaker is feeling and why?

11) A 9 year old boy is running away from his father who is swinging a jug cord over his head and screaming at him? What do you think the boy is feeling and why?

12) And what do you think the father in number 11 (above) is feeling and why?

13) A teenage girl is daydreaming in a hammock when she hears the loudest bang she has ever heard. What do you think the teenager is feeling and why?

14) A 12 year old boy hears adults talking about sex in the other room. He sits just around the corner to hear what they are saying? What do you think the boy is feeling and why?

15) A mother finds her baby rubbing the smelly contents of its diaper all over the crib. What do you think the mother is feeling and why?

16) A principal tells an 18 year old boy to tidy up his clothes or he'll contact his parents. The boy makes a rude gesture toward the school principal turns his back and swaggers away. What do you think the boy is feeling and why?

17) And what do you think the principal in number 16 (above) is feeling and why?

18) A woman is listening to a man tell her the same long winded story for the tenth time. What do you think she is feeling and why?

19) A mother catches a 9 year old boy doing something he knows he is not supposed to do. What do you think the boy is feeling and why?

20) Would you be interested in learning more about the what other people are feeling? yes \ no

VERBAL INSTRUCTIONS TO STUDENTS

- Questionnaire is for a University research project to discover how much high school students know about what other people are feeling in various situations. We hope to discover ways to help people have a happier life.

- Prepared by Rick Holcomb, a Master's degree thesis student at the University of Canterbury.

- Questionnaire is *anonymous*. Do NOT put your name on it. This way you are free to say what you really think.

- Questionnaire is *confidential*. No one but myself and my teacher will see what you write down. After the project, they will be burned.

- Filling out the questionnaire is *voluntary*. You do not have to do it. If you wish, you can just read one of your books. However, I would encourage you to give it a go because the questions are interesting and it should be fun to do.

- The first page has "demographic information" to help compare answers with other people of different ages and backgrounds.

- The rest of the questionnaire has short stories. Each question asks for the feeling the person might be experiencing and why you think they are feeling it. If any you don't understand, then just leave blank, that's ok.

- Please School Code and form number (eg. A3 or A5 or A6 or A7) on the top to identify your class.

- Also put your teacher's last name on the top because we're doing two classes of each form. (Aranui High School only)

- HAND OUT FORMS

- If you don't know how much money your family makes you can guess by the following scale:

    1 Benefit, unemployed
    2 Under 35,000 = factory work, secretarial, labour, government employee
    3 Over 35,000 = doctor, nurse, teacher, lawyer, business manager

- The questionnaires will be collected face down to ensure your privacy.

- We will hold a hold discussion on the answers when everyone is finished.

Objective Scoring Key for narrative answer questions 6 through 20

First entry for each question was the classical answer and subsequent entries are other plausible answers. '*' indicates question aims to elicit one of Izard's ten basic emotions which are listed as the first entry for that question.

Qno	Emotion	Pts	Reason for emotion given[1]	Pts
6) *	Sadness, Distress, Anguish (lonely, grief depressed)[2]	2	Missing partner, lonely, depressed Left behind, alone, no fun, loss, grieving, no-one to look after her	2
	Neutral, tinge of sadness	2	Finished grieving, moved on	3
	Happiness	1	Did not like partner, collected life insurance	1
7)	Proud	2	Great accomplishment, met goal, the best, achievement, representing country, won a medal	2
	Happy, elated or excited	1	Just won a gold medal	2
8)	Love, affection, or happiness	2	Close, together, romantic setting	2
	Nervous	1	Don't know what to say next	1
	Grief	1	One or both just lost something or someone	1
	Joy, relief	1	At last they are alone	1
9)	Jealous, Envious	2	His sister is getting all of the attention	2
	Hurt	1	Same reason as above	2
	Sad, lonely	1	By himself in the room	1
	Angry,	1	At mother for sending him to his room	1
10)*	Embarrass-ment, Shame, Humiliation, Guilt	2	People will laugh at him, think he's stupid, etc	2
11)*	Fear, Terror, Panic, Scared	2	Father might hit him or hurt him	2
	Confused	1	Doesn't know why father is chasing him	1
	Excited	1	They're playing a game known to be safe	1
12)*	Anger	2	The boy has done something wrong	2
	Confused	1	The father is drunk and doesn't know what he is doing	1
	Disappointed	1	Thought son would do better	1

[1] Two point reasons are still worth two points even if one point emotions are given

[2] Parenthetic emotions were not included in ***'s list of essential emotions in this category. It has been assumed that these words are reasonable synonyms in general usage.

	Startled, Astonished, Surprised	2	She was relaxed and not expecting the noise	2
13)*	Curious	1	She did not know what the noise was She wanted to know what it was	1
	Terrified, frightened, scared	1	Same as above	1
	Shocked	1	She was confused, disoriented by the noise	1
	Curious, Interest	2	He might learn something about sex	2
14)*	Excited	1	Same as above	2
	Confused	1	He doesn't understand what they are talking about	1
	Anxious, embarrassed, shame	1	It's naughty to talk about sex	1
	Frightened	1	Might get caught	1
	Disgust, Revulsion, Contempt	2	Excrement smells bad, feels gooey and is difficult to clean up	2
15)*	Sick, gross	1	Same as above	2
	Angry, Annoyed	1	The baby should not have done that	1
	Compassion	1	Baby can't help itself	1
	Contempt, Scorn, Disdain (arrogant, haughty), Disgruntled, Disrespect, Hellish, Rebellious, Superior, Revenge.	2	He thinks the rules are stupid, he is above them	2
16)*	Anger , defiance, annoyance	1	Didn't like being told what to do by an authority	2
	Happy, pleased, proud	1	He got them back, stood up to authority	1
	Fear, scared	1	Parents will find out and may punish him. Standing up to authority may be dangerous	1
	Hurt	1	Didn't like being told that the way he dresses is bad	1

	Angry, frustrated	2	He cannot control or get through to the boy He wants the school to have a good reputation	2
	Insulted	2	By the rude gesture	2
17)*	Helpless	2	There is nothing he can do to enforce the dress code without driving the student out of school	2
	Hurt, sad	1	He is trying to help the boy who won't listen	1
	Bored	2	She's heard is all before, nothing new	2
18)	Angry, annoyed, frustrated	1	He has no awareness of her needs, or she cannot stop or get away from him	1
	Guilty, Sorry, Naughty, Bad	2	He was caught doing something wrong that he knew he was not supposed to do	2
19)*	Confused	1	He saw an adult doing it	
	Frightened, scared	1	He might be told off or punished	1
	Angry	1	He was caught doing something that he believed was right	1
	Sorry	1	He didn't mean to do it	1
	Humiliated, embarrassed, Shame	1	Shouldn't have been caught, not fair	1

Accepted synonyms not repeated throughout the table:

Arrogant = smart, cool, tough.

Angry = hate, mad, furious, rage, p..... off (one point slang, too common to ignore), cross, peeved.

Embarrassed = stupid.

Fear = terror, scared, frightened, panic

Surprised = shocked, got a fright, alarmed.

Slang and swear words = deduct one point from normal award.

Multiple emotions and / or reasons given: Extra point is awarded for each appropriate emotion and or reason given beyond the first. Extra points not given for repetition of the same feeling word in the any one question.

Emotion vocabulary:

Total feeling words = count of the total feeling words used in the paper

Unique feeling words = count of the unique feeling words in the paper

Slang does not count as feeling words in vocabulary measurement

Repetition of the same feeling word in the any one question is not counted.

The word UPSET is not counted as it is too vague and could apply to most situations.

APPENDIX 2

RESULTS

Theoretical sample 56 point questionnaire response

(= one preferred emotion term and one preferred emotion)

6) A 60 year old woman's husband died a year ago. They were very close and loved each other very much. What do you think the woman is feeling and why?

Sad, because she misses her partner.

7) An athlete has just won her first international sporting event. As she receives her gold medal, what do you think the athlete is feeling and why?

Proud of her great achievement.

8) A man and a woman are walking on the beach together holding hands. What do you think they are both feeling and why?

Happy, because they are together.

9) A five year old boy watches his mother cuddle his cute 18 month old sister. She tells him to go to his room and stop taking his sister's toys. What do you think the boy is feeling towards his sister and why?

Jealous, because his sister is getting all of the attention.

10) A public speaker is standing in front of a large audience when he notices that his zip is open. What do you think the speaker is feeling and why?

Embarrassed, because people will laugh at him.

11) A 9 year old boy is running away from his father who is swinging a jug cord over his head and screaming at him? What do you think the boy is feeling and why?

Afraid, because his father might hit him.

12) And what do you think the father in number 11 (above) is feeling and why?

Angry, because the boy has done something wrong.

13) A teenage girl is daydreaming in a hammock when she hears the loudest bang she has ever heard. What do you think the teenager is feeling and why?

Startled, because she was relaxed and was not expecting the noise.

14) A 12 year old boy hears adults talking about sex in the other room. He sits just around the corner to hear what they are saying? What do you think the boy is feeling and why?

Curious, because he might learn something about sex.

15) A mother finds her baby rubbing the smelly contents of its diaper all over the crib. What do you think the mother is feeling and why?

Disgusted at the mess.

16) A principal tells an 18 year old boy to tidy up his clothes or he'll contact his parents. The boy makes a rude gesture toward the school principal turns his back and swaggers away. What do you think the boy is feeling and why?

Contempt, because he thinks the rules are stupid.

17) And what do you think the principal in number 16 (above) is feeling and why?

Angry, because he cannot control the boy.

18) A woman is listening to a man tell her the same long winded story for the tenth time. What do you think she is feeling and why?

Bored, because she has heard it all before.

19) A mother catches a 9 year old boy doing something he knows he is not supposed to do. What do you think the boy is feeling and why?

Guilty, because he did something wrong.

Sample answers: Male, age 13, Hillmorton, 17 points

6) *despressed[sic]. single*

7) *Hard, tinny, happy*

8) *horny*

9) *p------ off*

10) *embarrassed, shame*

11) *scared*

12) *p----- off*

13) *she gets a fright*

14) *p---- off*

15) *angry*

16) *cool, but scared*

17) *happy*

18) *bord [sic]*

19) *p---- off*

Sample Answers: Male, aged 14, Aranui, 10 points

6) *happy because she's in the husband's will*

7) *great because she will get loads of TV adds (sic) and make bulk money*

8) *they want to become more than just freind (sic) sexual lovers*

9) *the boy wants to kill his sister in a slow and painful death*

10) *it depends on weather (sic) he has anything under his pants*

11) *he wonders if his father is a rapist*

12) *out of control and quite horney (sic)*

13) *Happy because she is having a sexual dream*

14) *himself*

15) *Hungry*

16) *happy*

17) *hes (sic)a control freak*

18) *Pass*

19) *sad because he didnt was his hand be for (sic) playing with it*

Sample answers, Female, aged 13, Aranui, 25 points (= 1.5 SD Below Mean)

6) *she must of (sic) loved him and she will must feel very alone and very sorrow (sic)*

7) *very glad and jumping with joy because see (sic) must have trained a lot to get this far*

8) *Heaps of love!*

9) *a lot of jeolosie (sic) because he's hasn't got enough attention*

10) *very imbarresed (sic) would you*

11) *very sceard (sic) and very alert*

12) *very angry and very shitty*

13) *what the hell was that - would't you*

14) *well maby (sic) he thinks it's time to learn - gonna have to learn some time*

15) *where did you learn that from*

16) *who cares about the uniform*

17) *wish he would buck his idea's up*

18) *very annoyed*

19) .....

Sample answers, Male, aged 14, St Bedes, 45 points (= Global Mean)

6) *She is feeling lonely and depressed because she has no one to spend maybe her last years alive with*

7) *Overwhelomed (sic) with excittment (sic) because she is very proud with her acheivement (sic)*

8) *They want to go to bed because they are feeling horny*

9) *He is feeling depressed and sad because his stupid mum wont pay any attention to him*

10) *Shamful (sic) because everyone can see his undies*

11) *sceard (sic) cause his (sic) about to be hit a smacked round*

12) *Pissed off cause the little boy has been naughty*

13) *shocked and shattered because the bang was quick an (sic) unseen*

14) *He wanted to find a girl and tell her what he just heard because he cracked a stiff*

15) *Angry Annoyed because she porbally (sic) washed the crib heaps of times before*

16) *Proud cause he just told the principal to go jump and not many people have done that*

17) *Annoyed because a smart little boy told him to go and stick it*

18) *bored cause she's herd (sic) the same f__king story before*

19) *that he should of done it somewhere else*

Sample answers, Female, aged 15, Aranui, 65 Points (= 1.5 SD Above Mean)

6) *Very sad and lonely. She would have been close to him for a long time and he would have become a good companion for her. she loved him and now he's gone she misses him*

7) *A happy contented feeling. She would have trained for a long time to get it, and she is happy she has acheived (sic) that goal*

8) *In love Happy Because they are together*

9) *Jealous because his new sister is getting all of his Mums attention. He may feel unwanted cause Mum can't be there for him all the time.*

10) *Really embarrassed!! Because everyone has just seen his underwear*

11) *Scared, worried, upset. Scared mostly. Because he doesn't want to get hit by the jug cord*

12) *Angry. He probably has a lot of bottled up anger and is taking it out on his son because he knows he can't defend himself.*

13) *Frightened. Because she didn't know it was going to happen. probably wonders what it was.*

14) *Confused. he may not have heard some of the words the adults were using and may want to know what they mean.*

15) *Annoyed. Because she has to clean up the mess left behind*

16) *I don't know. He may be angry at something else, but has taken it out on the principal.*

17) *Probably angry because the boy did what he did. Maybe wonderous (sic) as to why*

18) *Bored. Because she's heard it all before*

19) *Guilty. Because he knew better but he did it anyway*

Sample answers, Female, aged 15, Aranui School, 102 points

(Second Highest Scoring Paper)

6) *Lonely and sad. She had hoped that they could be with one another through out her life. She has had to adjust to not being a couple.*

7) *Excited yet dassled (sic). It is hard to imagine how she got that far. Does everyone think she deserved to win? But she is proud as it has been a long hard struggle*

8) *Calm, Serene, happy, symbolic. Emotions seem important and it seems that this is what life is about, not money clothes etc. Comforted by another person's support and love.*

9) *Jealous and unloved. He used to be the one who got cuddled etc. and now it seems the baby matters more, although he would like to still be cuddled too.*

10) *Embarrassment. Before he has even begun to speak, he has been judged by the audience as a little silly. Will they take him seriously?*

11) *Scared but challenging the father. Almost daring him to do something, but scared that he actually will.*

12) *Angry and infuriated that the boy will not respect him. Using his physical power to control him, and frustrated when it doesn't work. Almost uncontrollable himself, as he feels he could hurt the boy until he stops acting 'smart'. Afraid he will, but he doesn't want to think about it, incase (sic) he feels guilt (sic).*

13) *Annoyed, curious, wistful. She had injoyed (sic) getting lost in herself, but now she has to find out what the noise is. Reality has come back along with her responsibilities*

14) *Dirty, Curious, naughty and guilty. He wants to hear, but it makes him feel dirty, purverted (sic). Yet he is curious to hear, but he feels guilty for easedroping (sic)*

15) *Frustrated, exsasperated (sic). More work to do, and the baby hasn't gone to sleep*

16) *Insulted rebelious(sic). He is his own person, an individual. His appearance is his business. He feels like shoving it in his face, and dramatising the scene of disobedience.*

17) *Frustrated and annoyed. All the students don't understand his point of view. They are all the same.*

18) *Ironic. It seems funny. She hums and ha's, but really she is observing the man, and understands him better, - his mannerisms and character*

19) *Guilty, sorry that he was caught*

APPENDIX 3

Scores by Demographic Groups

Student Numbers in Survey

Group	Females	Males	All
Students	158	209	357
Stream A	37	46	83
Stream B	41	32	73
Stream M	80	131	211
Age 13	36	43	79
Age 14	31	46	77
Age 15	45	33	78
Age 16	19	45	94
Age 17	18	28	46
Age 18	9	14	23
Income Ben	27	10	37
Income Med	21	44	65
Income High	39	88	127
Income Unk	71	67	138
Form 3	64	87	151
Form 4	7	8	15
Form 5	58	57	115
Form 6	4	24	28
Form 7	25	33	58
Race Asian	4	9	13
Race Caucasian	121	173	294
Race Polynesian	23	19	42
Race Mixed Poly/Cauc	9	6	15
Race Other	1	1	2
Race Unk	0	1	1
Distrib 0-9	0	10	10
Distrib 10-19	4	22	26
Distrib 20-29	10	33	43
Distrib 30-39	29	34	63
Distrib 40-49	30	44	74
Distrib 50-59	39	32	71
Distrib 60-69	25	21	46
Distrib 70-79	11	7	18
Distrib 80-89	4	6	10
Distrib 90-99	4	0	4
Distrib 100-110	2	0	2
Learn Y	118	123	241
Learn N	26	59	85
Learn U	14	27	41

Student numbers by school

Aranui	Females	78
	Males	29
	All	107
Hillmorton	Females	27
	Males	25
	All	52
Shirley Boys	All Males	67
St. Bead's	All Males	88
St. Margaret's	All Females	53

Average Scores by School

		Whole School	Form 3	Form 5	Form 7
Aranui	Females	49.3	40.0	56.7	52.5
	Males	42.6	34.7	59.1	*
	All	47.5	38.0	57.2	51.1
Hillmorton	Females	42.5	30.4	*	69.0
	Males	25.7	20.2	*	69.0
	All	34.4	24.7	*	69.0
Shirley Boys	All Males	36.5	34.4	24.2	54.6
St. Bead's	All Males	47.0	31.3	54.5	61.2
St. Margaret's	All Females	58.7	55.5	56.7	67.8

* Insufficient numbers of students

	Average Scores			***Individual Max Score***		***Zero's***
Group	All Female	All Male	All	Female Max	Male Max	Zero Count
All questions	51.3	40.5	45.1	104	89	-----
Question 6	4.9	4.0	4.4	14	9	11
Q7	4.4	3.8	4.1	11	11	10
Q8	4.2	3.1	3.6	10	10	51
Q9	4.4	3.4	3.8	10	9	9
Q10	3.9	3.2	3.5	8	8	18
Q11	4.1	3.3	3.6	10	9	23
Q12	3.4	3.7	3.0	12	8	49
Q13	3.6	3.0	3.3	8	11	44
Q14	3.2	2.5	2.8	10	8	80
Q15	3.2	2.3	2.7	10	9	58
Q16	2.6	2.2	2.4	9	7	71
Q17	3.0	2.3	2.6	9	8	80
Q18	3.3	2.6	2.9	9	8	46
Q19	2.8	2.0	2.3	8	7	79
Form 3	43.3	31.1	36.3	-----	-----	-----
Form 5	56.7	43.6	50.2	-----	-----	-----
Form 7	64.4	57.5	60.5	-----	-----	-----
Form 3A	44.9	38.3	40.3	-----	-----	-----
Form 3B	34.8	17.1	28.7	-----	-----	-----
Form 5A	63.2	59.1	62.0	-----	-----	-----
Form 5B	48.6	24.2	34.9	-----	-----	-----
Form 7B	52.5	*	51.1	-----	-----	-----
Race Asian	50.0	23.4	31.6	-----	-----	-----
Race Caucasian	54.8	42.6	47.6	-----	-----	-----
Race Polynesian	35.7	30.0	33.1	-----	-----	-----
Race Mixed Poly / Cauc	47.1	45.3	46.4	-----	-----	-----
Other/ Unk	*	*	*	-----	-----	-----
Income Ben	45.6	39.5	43.9	-----	-----	-----
Income Low	56.9	44.6	48.6	-----	-----	-----
Income Hi	58.9	42.0	46.6	-----	-----	-----
Income Unk	48.7	35.9	42.5	-----	-----	-----
=========	=======	=======	Ave	Max	Min	-----
Age 13 Female	-----	-----	45.0	88	20	-----
Age 13 Male	-----	-----	33.0	86	7	-----
Age 14 Female	-----	-----	41.0	67	14	-----
Age 14 Male	-----	-----	29.9	58	3	-----

Age 15 Female	-----	-----	56.1	102	11	-----
Age 15 Male	-----	-----	39.5	68	4	-----
Age 16 Female	-----	-----	52.4	92	13	------
Age 16 Male	-----	-----	46.5	89	0	-----
Age 17 Female	-----	-----	62.5	104	20	-----
Age 17 Male	-----	-----	52.7	78	9	-----
Age 18 Female	-----	-----	63.3	86	32	-----
Age 18 Male	-----	-----	56.9	88	22	-----

Vocabulary Profiles

	All Words	All Words	All Words	Unique Words	Unique Words	Unique Words
Group	Tot. Female	Tot. Male	Total	Tot Female	Tot. Male	Total
All Forms	21.5	15.5	18.1	17.0	21.7	14.5
Form 3	18.6	12.5	15.1	14.7	10.2	12.1
Form 5	23.7	16.3	20.0	18.8	13.1	15.6
Form 7	25.2	20.7	22.6	19.8	16.9	18.2
Form 3A	16.1	14.8	15.2	13.4	12.2	12.6
Form 3B	17.3	6.0	13.3	13.9	5.3	10.9
Form 5A	23.8	20.9	22.9	19.3	15.3	18.1
Form 5B	19.7	9.6	14.0	15.5	8.0	11.3
Form 7B	18.0	*	17.0	14.7	*	14.0
Race Asian	20.0	10.3	13.3	13.5	8.6	10.1
Race Caucasian	22.6	16.1	18.8	17.8	13.2	15.1
Race Polynesian	17.4	12.7	15.3	13.9	9.9	12.1
Race Mixed Poly / Cauc	19.6	16.5	18.3	16.9	13.5	15.5
Other/ Unk	*	*	*	*	*	*
Inc'm Ben	20.4	14.2	18.8	16.2	12.0	15.1
Inc'm Low	23.3	17.0	10.9	19.3	13.8	15.6
Inc'm Hi	25.0	16.0	18.7	19.2	13.0	14.9
Inc'm Unk	19.5	14.1	16.9	15.5	11.5	13.6

Vocabulary Max and Min

	Female Max	Male Max	Female Min	Male Min
Total Words used	71	35	6	0
Unique words used	51	28	5	0

APPENDIX 4

Summary Statistical Test Results and Cumulative Vocabulary

Summary of test results - Total Score

Demographic Group A	Demographic Group B	t Score	t Score p Level	t Score * p< .05 ** p<.001	Levine p Score	Levine p * = p>.001 ** = p>.05	t Score p p<.001 Levine p p>.05
All Females	All Males	5.4	.000000	**	.09	**	*
Form 3 (F)	Form 3 (M)	4.8	.000003	**	.42	**	*
Form 5 (F)	Form 5 (M)	3.6	.0005	**	.12	**	*
Form 7 (F)	Form 7 (M)	1.9	.06		.40		
Form 3 (F)	Form 5 (F)	-4.5	.00001	**	.24	**	*
Form 5 (F)	Form 7 (F)	-4.8	.00001	**	.24	**	*
Form 3 (F)	Form 7 (F)	-6.2	.000000	**	.15	**	*
Form 3 (M)	Form 5 (M)	-4.0	.00009	**	.02	*	
Form 5 (M)	Form 7 (M)	-3.4	.001	**	.01	*	
Form 3 (M)	Form 7 (M)	-8.4	.000000	**	.25	**	*
Benefit (F)	Benefit (M)	.79	.43		.04		
Mid Inc (F)	Mid Inc (M)	2.6	101	*	.15	**	
High Inc (F)	High Inc (M)	3.9	.0001	**	.42	**	*
Form 7 Mixed	Form 7 B str	1.9	.06	.60		**	

Gender Demographics on Total Scores

	Mean	Std	N	Min	Max	N<30
Total	45.1	19.6	367	0	104	
Females	51.3	18.0	158	11	104	
Males	40.4	19.5	209	0	89	
Form 3 (F)	43.3	14.6	64	15	88	
Form 3 (M)	31.1	15.8	87	0	86	
Form 5 (F)	56.7	17.7	58	13	102	
Form 5 (M)	43.5	21.2	57	2	89	
Form 7 (F)	64.4	13.4	25	32	104	*
Form 7 (M)	57.5	14.2	33	22	88	
B. Income (F)	45.6	17.3	27	20	88	*
B. Income (M)	39.5	28.1	10	3	88	*
M. Income (F)	56.9	21.3	21	11	102	*
M. Income (M)	44.9	15.6	44	8	83	
H. Income (F)	56.9	19.3	39	15	104	
H. Income (M)	42.0	19.5	88	2	85	

Cumulative Vocabulary of all students aged 13 -18

Adventurous	Disturbed	Intimidated	Ridiculed
Affection	Doubt	Intrigued	Right (correct)
Aggressive	Downhearted	Involved	Run down
Aggravated	Dozy	Ironic	Secure
Aggravation	Dread	Irritated	Self-conscious
Alarmed	Ecstatic	Left out	Self-hatred
Amazed	Empty	Livid	Serious
Amused	Enjoyment	Loving	Shake
Annoyed	Enraged	Mean	Shaken
Anticipation	Enthusiasm	Mischievous	Shattered
Anxiety	Evil	Mixed up	Sheepish
Astounded	Exasperated	Mortified	Small
Awkward	Exhausted	Motivated	Smug
Bare	Exposed	Mourning	Sneaky
Bemused	Fantastic	Naughty	Special, wanted
Brave	Fascinated	Nervous	Strange
Breathless	Fed-up	Nosy	Stressed
Caring	Foolish	Offended	Strong
Caught	Frenzied	Out of control	Super
Challenged	Fresh	Overjoyed	Superior
Close	Frightened	Overwhelmed	Taken aback
Concerned	Frustrated	Panic	Terrific
Confident	Fulfilled	Patriotic	Thankful
Contempt	Glad	Peevish	Thrilled
Content	Glorious	Petrified	Together
Cornered	Good	Pleasant	Togetherness
Daring	Great	Pondering	Torn apart
Dazed	Grumpy	Popular	Unsure
Dazzled	Heartache	Powerful	Victorious
Defiant	Hellish	Psychotic	Violent
Desperate	Helpless	Question	Wanting to die
Despise	High	Rebellious	Warm inside
Destructive	Honoured	Rejected	Warmth
Disappointed	Horrible	Relieved	Wistful
Disgruntled	In control	Remorse	Wretched
Disinterested	Incapable	Resentful,	
Dislike	Incomplete	Resentment	
Disrespectful	Independent	Retribution	
Distorted	Innocent	Rewarded	
Distraught	Inquisitive		

APPENDIX 5

Raw Data File

Key for Data File

Item	Definition	Codes
ID	Student Identification number	Assigned in order scored Note: numbers 261 to 269 not used
SCH	School identification	A = Aranui, B= St. Bede's, H = Hillmorton, M = St. Margaret's, S = Shirley Boys High
Str	Academit Stream	A = Academically inclined, B = Non-academically inclined
Fen	Gender of student	F = Female, M = Male
Age	Age of student	Actual age in whole years
Inc	Income of parents or guardians	1 = Beneficiary, 2 = Under $35.000 3 = Over $35,000, 4 = income unknown
Frm	Form number	Actual form number
Rac	Race	A = Asian, C = Caucasian, M = Maori, P = Polynesian, U = Unknown
Grf	Grief: Question 6	Actual points scored on this question
Pri	Pride:	"
Lov	Love	"
Jel	Jealous	"
Emb	Embarrassment	"
Fea	Fear	"
Ang	Anger	"

Continued on next page.....

Key for Data File (Continued)

Item	Definintion	Codes
Sur	Surprise	Actual points scored on this question
Cur	Curiosity	"
Dis	Disgust	"
Con	Contempt	"
Ang	Anger	"
Bor	Boredom	"
Gui	Guilt	"
Lrn	Desire to learn more about emotions	Y = Yes, N = No, U = Undecided
Tot	Total score for emotion names plus reasons	Actual score
VoT	Vocabulary Total emotion names used	Actual number of emotion words
VoU	Vocabulary Total Unique emotion names used	Actual number of different emotion words
Com	Comments	

Highest scoring students with total scores greater than +1.5 standard deviations above the mean

ID	Sch	Str	Gen	Age	Inc	Frm	Rac	Grf	Pri	Lov	Jel	Emb	Fea	Ang	Sur	Cur	Dis	Con	Ang	Bor	Gui	Lrn	Tot	VoT	VoU
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20			
106	M	M	F	17	3	7	C	9	8	10	10	6	6	4	6	7	10	9	7	5	7	Y	104	43	35
187	A	A	F	15	2	5	C	6	8	9	7	6	5	12	8	9	5	8	5	9	5	Y	102	38	33
93	M	M	F	15	3	5	C	7	11	2	8	6	4	6	6	8	10	6	6	8	5	Y	93	50	39
205	A	A	F	15	4	5	C	7	6	5	6	7	6	8	6	5	7	7	9	6	8	Y	93	37	25
88	M	M	F	16	3	5	C	14	11	9	10	7	8	5	5	4	3	4	4	4	4	U	92	71	51
75	M	M	F	15	3	5	A	7	8	10	7	8	10	7	6	8	4	5	4	5	2	Y	91	40	24
195	A	A	M	16	4	5	C	8	6	4	7	7	6	8	6	7	6	6	5	8	5	U	89	33	14
89	M	M	F	15	2	5	C	9	8	5	6	7	6	3	6	8	8	5	4	8	6	Y	89	31	22
74	M	M	F	13	1	3	C	5	4	8	8	8	6	8	7	4	5	7	7	5	6	U	88	42	36
289	S	M	M	18	1	7	C	8	8	10	9	8	8	4	3	8	9	5	4	2	2	Y	88	21	25
173	A	A	M	13	4	3	P	9	11	10	7	5	8	8	6	3	4	4	5	3	3	U	86	35	28
53	H	M	F	18	2	7	C	8	8	9	6	5	8	6	7	8	6	3	5	3	4	Y	86	39	33
376	B	M	M	18	3	7	C	6	5	7	6	4	6	6	9	5	7	7	8	4	5	Y	85	30	26
50	H	M	F	18	4	7	C	7	5	9	6	7	6	5	7	6	5	6	4	5	6	Y	84	37	32
340	B	M	M	16	2	5	C	8	7	8	9	6	4	4	7	6	6	5	6	2	5	Y	83	32	28
198	A	A	M	16	4	5	M	6	7	7	8	5	5	4	11	5	6	5	5	5	3	Y	82	28	20
345	B	M	M	16	3	5	C	6	5	6	7	8	5	7	6	7	3	6	5	5	3	Y	79	27	22
101	M	M	F	17	3	7	C	6	7	6	6	6	4	3	8	4	7	5	7	4	5	Y	78	41	27
51	H	M	M	17	3	7	C	7	9	6	6	6	5	5	5	4	5	5	4	6	5	Y	78	32	22
67	M	M	F	13	4	3	C	6	5	7	4	6	9	7	6	6	6	4	6	2	3	Y	77	36	20
183	A	A	F	16	1	5	C	6	6	7	7	4	7	7	4	5	5	3	5	4	5	Y	75	36	26
204	A	A	F	15	4	5	C	6	4	6	9	4	4	5	7	5	3	5	5	6	6	Y	75	22	18

Lowest scoring students with total scores less than -1.5 standard deviations below the mean

ID	Sch	Str	Gen	Age	Inc	Frm	Rac	Grf	Pri	Lov	Jel	Emb	Fea	Ang	Sur	Cur	Dis	Con	Ang	Bor	Gui	Lrn	Tot	VoT	VoU
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20			
224	S	A	M	13	3	3	C	2	3	0	1	4	1	2	0	1	1	1	0	0	0	Y	16	8	6
218	S	A	M	14	3	3	C	0	2	0	3	4	2	0	1	0	1	0	3	0	0	Y	16	6	5
254	S	B	M	15	2	5	C	3	2	0	3	2	4	0	0	0	0	1	0	0	0	N	15	6	6
10	H	M	F	14	3	3	C	2	1	0	1	4	2	2	3	0	0	0	0	0	0	U	15	7	7
117	A	B	M	13	4	3	M	3	3	4	3	2	0	0	0	0	0	0	0	0	0	U	15	5	5
43	H	M	F	15	3	4	C	3	2	0	1	3	1	2	1	1	1	0	0	0	0	Y	15	13	12
310	B	M	M	14	2	3	A	3	1	2	1	2	2	0	2	0	0	0	0	0	0	U	13	7	5
6	H	M	M	13	4	3	U	4	1	2	0	2	2	0	1	0	0	1	0	0	0	U	13	10	6
94	M	M	F	16	4	5	A	0	2	0	2	1	0	0	0	2	1	0	0	3	2	Y	13	6	6
290	B	M	M	14	3	3	C	3	2	1	1	0	2	1	0	0	0	1	1	1	0	Y	13	4	4
16	H	M	M	14	3	3	C	2	3	0	2	0	2	2	1	0	1	0	0	0	0	Y	13	7	7
257	S	B	M	16	3	5	C	3	2	0	3	2	0	0	0	0	0	0	1	1	0	N	12	4	4
4	H	M	M	14	4	3	P	2	1	1	1	0	2	0	1	0	0	1	0	2	1	Y	12	11	8
36	H	M	F	15	2	4	C	3	0	4	0	0	2	0	1	0	0	1	0	0	0	U	11	8	5
245	S	B	M	15	1	5	C	2	1	1	0	2	0	2	0	0	2	1	0	0	0	U	11	8	7
230	S	A	M	14	3	3	C	1	3	0	1	0	0	1	1	0	0	1	1	1	1	Y	11	4	4
122	A	B	M	14	3	3	P	0	3	0	1	1	0	0	2	1	0	0	1	1	1	Y	11	1	1
299	B	M	M	14	3	3	C	0	0	0	1	0	1	2	0	0	0	1	3	2	0	N	10	5	4
121	A	B	M	14	1	3	P	2	2	1	1	1	1	1	0	0	0	1	0	0	0	N	10	5	3
9	H	M	M	13	4	3	C	3	1	0	1	2	0	0	0	0	0	1	2	0	0	Y	10	5	4
250	S	B	M	17	4	5	C	3	3	0	1	0	2	0	0	0	0	0	0	0	0	N	9	2	2
42	H	M	M	14	3	4	A	4	1	0	2	2	0	0	0	0	0	0	0	0	0	Y	9	6	6
248	S	B	M	15	3	5	C	2	0	0	2	2	2	0	0	0	0	0	0	0	0	N	8	5	5
2	H	M	M	13	2	3	C	2	1	2	1	2	0	0	0	0	0	0	0	0	0	U	8	8	4
123	A	B	M	13	4	3	P	0	3	1	1	0	2	0	0	0	0	0	0	0	0	U	7	3	2
3	H	M	M	16	4	3	A	4	1	0	0	0	0	0	0	0	0	0	0	0	0	U	5	3	2
247	S	B	M	15	4	5	C	2	0	0	0	2	0	0	0	0	0	0	0	0	0	U	4	2	2
119	A	B	M	14	1	3	P	0	1	1	1	0	0	0	0	0	0	0	0	0	0	N	3	1	1
244	S	B	M	16	3	5	P	0	1	0	1	0	0	0	0	0	0	0	0	0	0	N	2	1	1
17	H	M	M	16	4	3	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	U	0	0	0

Student Questionnaire Raw Data - full data set by ID number

ID	Sch	Str	Gen	Age	Inc	Frm	Rac	Grf	Pri	Lov	Jel	Emb	Fea	Ang	Sur	Cur	Dis	Con	Ang	Bor	Gui	Lrn	Tot	VoT	VoU	Com
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20				
1	H	M	M	14	2	3	P	5	2	5	2	4	1	3	3	2	2	1	0	2	1	Y	33	19	10	MAORI
2	H	M	M	13	2	3	C	2	1	2	1	2	0	0	0	0	0	0	0	0	0	U	8	8	4	
3	H	M	M	16	4	3	A	4	1	0	0	0	0	0	0	0	0	0	0	0	0	U	5	3	2	ESOL
4	H	M	M	14	4	3	P	2	1	1	1	0	2	0	1	0	0	1	0	2	1	Y	12	11	8	PACIFIC IS
5	H	M	M	13	4	3	P	2	1	0	1	3	2	2	1	0	1	1	0	2	1	N	17	10	8	MAORI
6	H	M	M	13	4	3	U	4	1	2	0	2	2	0	1	0	0	1	0	0	0	U	13	10	6	
7	H	M	F	13	4	3	M	4	1	1	4	4	2	4	3	0	1	1	0	2	1	Y	28	11	9	MAORI\PA
8	H	M	F	14	1	3	O	4	3	2	3	2	4	2	1	4	1	1	1	2	0	Y	30	13	11	
9	H	M	M	13	4	3	C	3	1	0	1	2	0	0	0	0	0	1	2	0	0	Y	10	5	4	
10	H	M	F	14	3	3	C	2	1	0	1	4	2	2	3	0	0	0	0	0	0	U	15	7	7	
11	H	M	F	14	4	3	C	5	3	3	3	5	5	2	4	3	1	0	3	3	2	Y	42	32	21	
12	H	M	F	13	4	3	C	2	1	2	3	2	2	2	1	0	1	0	2	1	1	U	20	14	8	
13	H	M	F	14	4	3	M	4	4	4	5	2	4	2	1	4	2	0	0	2	0	U	34	15	15	
14	H	M	F	13	2	3	C	3	5	4	5	2	0	1	2	0	2	1	2	2	0	U	29	13	10	
15	H	M	F	14	4	3	C	2	3	4	4	2	2	0	2	0	0	1	0	4	2	U	26	11	8	
16	H	M	M	14	3	3	C	2	3	0	2	0	2	2	1	0	1	0	0	0	0	Y	13	7	7	
17	H	M	M	16	4	3	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	U	0	0	0	ILLITERAT
18	H	M	F	13	4	3	C	4	2	3	2	2	2	2	1	2	0	0	0	2	1	U	23	13	12	
19	H	M	F	13	4	3	C	2	1	3	1	4	4	4	3	4	2	2	4	4	3	Y	41	13	11	
20	H	M	M	13	4	3	C	4	4	3	0	2	3	2	2	2	1	2	0	2	2	U	29	17	14	
21	H	M	M	14	3	3	C	2	1	0	2	3	0	0	0	0	2	2	4	2	0	N	18	9	7	
22	H	M	M	13	4	3	C	2	4	4	2	2	0	2	4	0	0	0	0	3	0	N	23	11	7	
23	H	M	M	14	4	3	C	4	3	0	1	2	4	2	1	0	1	1	2	2	1	N	24	11	10	
24	H	M	F	13	2	3	P	5	3	3	3	4	4	2	3	4	3	2	4	0	2	Y	42	18	13	
25	H	M	F	14	4	3	P	5	5	0	0	4	5	7	2	0	0	1	3	2	1	Y	35	19	14	
26	H	M	M	14	4	3	C	4	3	4	3	4	1	4	4	4	5	5	4	2	2	N	49	18	14	
27	H	M	M	14	4	3	C	4	4	4	4	4	4	4	4	4	1	2	4	4	2	N	49	14	12	
29	H	M	F	15	3	4	C	5	5	7	7	2	4	2	6	2	3	1	7	6	2	Y	59	30	22	
30	H	M	F	14	4	4	C	3	3	3	6	2	2	2	2	2	0	0	1	0	0	Y	26	15	13	
31	H	M	M	14	3	4	C	5	3	5	4	2	2	2	4	4	2	0	0	2	2	Y	37	13	12	
32	H	M	M	15	4	4	C	3	3	4	2	2	4	5	3	2	1	2	1	2	0	N	34	22	20	

Student Questionnaire Raw Data - full data set by ID number

ID	Sch	Str	Gen	Age	Inc	Frm	Rac	Grf	Pri	Lov	Jel	Emb	Fea	Ang	Sur	Cur	Dis	Con	Ang	Bor	Gui	Lrn	Tot	VoT	VoU	Com
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20				
33	H	M	M	14	4	4	C	4	4	1	1	2	3	2	5	4	1	0	0	2	0	N	29	12	10	
34	H	M	M	15	4	4	C	4	3	4	2	0	4	2	0	2	1	0	0	2	0	N	24	9	7	
35	H	M	F	14	1	4	C	6	3	4	6	5	1	2	3	6	1	0	2	0	0	N	39	20	13	
36	H	M	F	15	2	4	C	3	0	4	0	0	2	0	1	0	0	1	0	0	0	U	11	8	5	
37	H	M	M	14	3	4	A	3	0	0	3	2	2	2	1	0	3	0	1	2	1	Y	20	11	9	
38	H	M	M	15	4	4	C	1	3	2	1	2	2	1	2	1	1	0	0	2	1	N	19	9	8	
39	H	M	F	15	2	4	C	8	5	5	6	4	6	5	5	3	3	1	6	4	4	Y	65	22	18	
40	H	M	F	14	4	6	P	3	2	5	3	5	3	2	0	2	2	1	3	5	1	Y	37	24	18	
41	H	M	M	15	2	4	C	6	2	2	3	1	2	4	3	0	2	2	0	2	1	Y	30	15	13	
42	H	M	M	14	3	4	A	4	1	0	2	2	0	0	0	0	0	0	0	0	0	Y	9	6	6	
43	H	M	F	15	3	4	C	3	2	0	1	3	1	2	1	1	1	0	0	0	0	Y	15	13	12	
44	H	M	F	14	4	4	C	6	5	2	5	6	4	2	3	0	4	1	3	4	2	Y	47	23	13	
45	H	M	F	17	3	7	C	6	8	5	5	3	6	5	4	3	7	4	5	6	3	Y	70	28	16	
46	H	M	F	18	4	7	C	4	5	4	4	4	6	5	4	5	6	4	4	4	4	Y	63	23	17	
47	H	M	F	18	3	7	C	6	6	4	5	4	4	5	4	2	3	4	5	4	4	Y	60	20	10	
48	H	M	F	17	4	7	C	4	6	5	4	5	6	4	5	2	6	3	5	5	4	Y	64	19	14	
49	H	M	F	18	1	7	C	4	4	5	4	4	5	3	4	0	5	4	5	5	4	N	56	17	12	
50	H	M	F	18	4	7	C	7	5	9	6	7	6	5	7	6	5	6	4	5	6	Y	84	37	32	
51	H	M	M	17	3	7	C	7	9	6	6	6	5	5	5	4	5	5	4	6	5	Y	78	32	22	
52	H	M	M	18	3	7	C	6	6	6	5	4	4	4	5	7	0	3	4	4	2	N	60	22	17	
53	H	M	F	18	2	7	C	8	8	9	6	5	8	6	7	8	6	3	5	3	4	Y	86	39	33	
54	M	M	F	14	3	3	C	5	5	4	2	4	3	3	1	2	2	1	4	1	5	Y	42	11	10	
55	M	M	F	13	3	3	C	6	3	4	4	6	4	5	1	0	3	3	4	4	0	Y	47	18	13	
56	M	M	F	14	3	3	C	6	6	4	2	5	4	4	4	5	3	3	5	4	4	N	59	21	16	
57	M	M	F	13	2	3	C	3	7	5	3	3	7	6	5	6	4	1	5	7	6	Y	68	42	32	
58	M	M	F	14	2	3	C	4	1	6	6	4	4	4	1	3	5	4	0	4	1	Y	47	15	14	
59	M	M	F	13	3	3	C	5	4	5	2	4	4	4	3	4	3	2	5	5	4	Y	54	20	15	
60	M	M	F	14	3	3	C	8	8	5	7	6	7	2	3	1	5	3	3	5	4	Y	67	21	16	
61	M	M	F	13	3	3	C	3	1	3	3	3	2	2	3	3	3	2	3	1	0	Y	32	19	16	
62	M	M	F	14	3	3	C	7	5	4	3	4	4	4	4	3	3	5	3	4	3	Y	56	23	18	
63	M	M	F	13	3	3	C	5	1	3	4	2	4	2	5	2	2	0	3	2	2	Y	37	20	16	

Student Questionnaire Raw Data - full data set by ID number

ID	Sch	Str	Gen	Age	Inc	Frm	Rac	Grf	Pri	Lov	Jel	Emb	Fea	Ang	Sur	Cur	Dis	Con	Ang	Bor	Gui	Lrn	Tot	VoT	VoU	Com
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20				
64	M	M	F	13	4	3	C	7	3	4	4	2	4	2	5	7	3	4	4	6	4	Y	59	21	13	
65	M	M	F	13	2	3	C	7	7	6	5	8	9	0	6	10	4	4	2	4	2	Y	74	41	35	
66	M	M	F	14	3	3	A	4	2	3	4	4	4	4	4	4	3	2	3	4	2	Y	47	14	11	
67	M	M	F	13	4	3	C	6	5	7	4	6	9	7	6	6	6	4	6	2	3	Y	77	36	20	
68	M	M	F	14	4	3	C	3	3	3	4	4	6	5	5	2	3	0	1	4	4	Y	47	20	15	
69	M	M	F	13	3	3	C	6	5	5	4	5	5	4	5	3	0	3	4	4	2	Y	55	20	15	
70	M	M	F	14	3	3	C	5	3	5	3	4	6	4	4	6	4	4	5	4	4	Y	61	18	12	
71	M	M	F	13	3	3	C	4	5	5	4	3	9	3	1	7	6	3	6	2	2	Y	60	29	20	
72	M	M	F	13	4	3	C	6	3	4	3	5	4	0	4	3	3	0	2	2	4	Y	43	21	15	
73	M	M	F	13	3	3	C	5	5	3	4	4	5	5	2	3	2	0	3	3	2	Y	46	23	19	
74	M	M	F	13	1	3	C	5	4	8	8	8	6	8	7	4	5	7	7	5	6	U	88	42	36	
75	M	M	F	15	3	5	A	7	8	10	7	8	10	7	6	8	4	5	4	5	2	Y	91	40	24	
76	M	M	F	15	3	5	C	2	3	3	5	4	2	3	3	3	1	2	3	2	4	Y	40	22	20	
77	M	M	F	15	3	5	C	2	2	4	3	5	5	2	3	2	3	2	0	2	1	Y	36	16	11	
78	M	M	F	15	4	5	C	5	5	4	4	5	5	4	4	3	3	3	4	3	3	N	55	21	19	
79	M	M	F	15	4	5	C	4	3	4	2	5	5	0	2	2	1	3	2	1	1	N	35	20	14	
80	M	M	F	16	4	5	C	5	7	4	5	1	2	2	5	2	3	3	4	2	3	Y	48	21	18	
81	M	M	F	15	4	5	C	5	3	7	5	4	3	5	3	2	7	2	2	4	2	Y	54	29	26	
82	M	M	F	16	3	5	C	7	5	1	1	4	4	2	5	5	1	2	1	5	3	Y	46	22	20	
83	M	M	F	15	3	5	C	7	4	3	5	5	5	2	2	2	6	4	0	2	4	Y	51	19	18	
84	M	M	F	15	3	5	C	4	0	6	5	3	2	4	3	4	1	3	4	0	3	Y	42	23	17	
85	M	M	F	15	3	5	C	4	7	3	3	3	3	5	2	1	4	4	5	3	3	N	50	24	18	
86	M	M	F	16	3	5	C	3	6	4	5	1	2	4	2	4	1	1	2	2	1	Y	38	18	13	
87	M	M	F	15	3	5	C	7	10	7	5	4	6	4	4	8	4	1	4	2	2	N	68	26	24	
88	M	M	F	16	3	5	C	14	11	9	10	7	8	5	5	4	3	4	4	4	4	U	92	71	51	
89	M	M	F	15	2	5	C	9	8	5	6	7	6	3	6	8	8	5	4	8	6	Y	89	31	22	
90	M	M	F	15	3	5	C	6	5	5	6	2	4	2	7	6	7	5	5	6	6	Y	72	28	25	
91	M	M	F	15	3	5	C	8	7	5	8	4	6	0	3	8	7	3	5	4	4	Y	72	32	26	
92	M	M	F	15	3	5	A	4	6	5	3	2	4	4	2	4	3	1	2	5	4	Y	49	20	13	
93	M	M	F	15	3	5	C	7	11	2	8	6	4	6	6	8	10	6	6	8	5	Y	93	50	39	
94	M	M	F	16	4	5	A	0	2	0	2	1	0	0	0	2	1	0	0	3	2	Y	13	6	6	ESOL

Student Questionnaire Raw Data - full data set by ID number

ID	Sch	Str	Gen	Age	Inc	Frm	Rac	Grf	Pri	Lov	Jel	Emb	Fea	Ang	Sur	Cur	Dis	Con	Ang	Bor	Gui	Lrn	Tot	VoT	VoU	Com
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20				
95	M	M	F	18	4	7	C	5	6	3	6	3	5	4	7	4	4	4	5	4	4	Y	64	27	23	
96	M	M	F	17	4	7	C	4	4	6	5	5	4	4	6	4	4	5	6	4	3	Y	64	25	17	
97	M	M	F	17	3	7	C	5	4	6	5	5	4	3	5	4	5	3	2	3	5	Y	59	23	19	
98	M	M	F	17	3	7	M	6	3	7	5	4	7	2	4	5	5	5	6	4	3	Y	66	27	23	
99	M	M	F	17	4	7	C	6	6	4	7	4	5	5	6	4	2	5	5	4	2	Y	65	30	27	
100	M	M	F	17	4	7	C	6	5	4	4	5	4	3	6	4	3	4	4	6	4	Y	62	23	18	
101	M	M	F	17	3	7	C	6	7	6	6	6	4	3	8	4	7	5	7	4	5	Y	78	41	27	
102	M	M	F	17	2	7	C	5	6	5	6	5	6	5	4	6	2	4	0	2	4	Y	60	25	22	
103	M	M	F	17	3	7	C	5	6	5	5	4	4	2	7	5	5	3	0	3	4	Y	58	25	22	
104	M	M	F	18	3	7	C	6	4	7	8	5	5	2	5	6	7	5	2	2	3	Y	67	26	22	
105	M	M	F	17	3	7	C	7	6	6	5	4	5	4	4	6	4	2	5	4	4	N	66	23	19	
106	M	M	F	17	3	7	C	9	8	10	10	6	6	4	6	7	10	9	7	5	7	Y	104	43	35	
107	A	B	F	13	4	3	P	3	3	3	2	2	2	4	4	2	1	1	1	2	1	Y	31	22	17	
108	A	B	F	14	4	3	P	5	5	3	3	4	2	2	3	0	2	1	2	2	1	Y	35	19	14	
109	A	B	F	13	1	3	P	3	4	4	3	2	1	1	4	1	2	3	2	2	2	Y	34	12	11	
110	A	B	F	14	4	3	P	4	3	4	3	2	2	4	0	1	1	0	2	0	0	U	26	11	8	
111	A	B	F	13	1	3	P	5	4	2	1	3	2	5	4	0	3	0	0	3	0	Y	32	12	12	
112	A	B	F	14	4	3	P	4	3	4	3	2	4	2	5	6	4	0	0	2	2	Y	41	21	18	
113	A	B	F	14	1	3	P	4	3	5	5	3	5	2	3	3	1	3	3	1	1	Y	42	31	25	
114	A	B	M	14	4	3	P	4	4	2	2	2	2	2	4	4	1	2	2	0	0	Y	31	12	9	
115	A	B	M	14	1	3	P	4	4	3	3	4	3	4	2	1	0	0	1	0	0	Y	29	11	11	
116	A	B	M	13	4	3	P	3	3	2	3	4	3	0	4	1	4	1	1	1	1	Y	31	10	10	
117	A	B	M	13	4	3	M	3	3	4	3	2	0	0	0	0	0	0	0	0	0	U	15	5	5	
118	A	B	F	14	1	3	P	3	1	0	1	2	2	4	2	0	1	1	0	1	2	Y	20	11	9	ILLITERAT
119	A	B	M	14	1	3	P	0	1	1	1	0	0	0	0	0	0	0	0	0	0	N	3	1	1	
120	A	B	F	13	1	3	P	3	4	2	4	2	3	2	1	1	0	0	2	1	0	Y	25	11	11	
121	A	B	M	14	1	3	P	2	2	1	1	1	1	1	0	0	0	1	0	0	0	N	10	5	3	
122	A	B	M	14	3	3	P	0	3	0	1	1	0	0	2	1	0	0	1	1	1	Y	11	1	1	
123	A	B	M	13	4	3	P	0	3	1	1	0	2	0	0	0	0	0	0	0	0	U	7	3	2	
124	A	B	F	14	4	3	P	3	7	2	7	3	3	1	4	2	3	6	4	3	5	Y	53	21	16	COLLABO
125	A	B	F	13	1	3	P	4	5	2	3	5	3	1	4	0	1	0	0	2	0	Y	30	15	13	COLLABO

Student Questionnaire Raw Data - full data set by ID number

ID	Sch	Str	Gen	Age	Inc	Frm	Rac	Grf	Pri	Lov	Jel	Emb	Fea	Ang	Sur	Cur	Dis	Con	Ang	Bor	Gui	Lrn	Tot	VoT	VoU	Com
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20				
126	A	B	F	14	4	3	P	6	3	0	5	3	3	3	3	1	0	0	2	2	1	Y	32	18	17	
127	A	B	F	15	4	3	C	4	4	4	4	3	2	2	0	0	1	0	4	2	0	Y	30	8	8	
128	A	B	F	13	1	3	P	5	5	4	4	2	2	2	5	0	3	2	1	4	2	Y	41	21	14	
129	A	B	F	13	2	3	P	5	3	5	6	5	4	3	5	3	1	2	2	2	4	Y	50	26	16	
130	A	B	F	16	1	5	C	4	6	4	3	4	4	5	4	4	4	4	4	4	4	N	58	17	14	
131	A	B	F	16	4	5	C	4	1	6	3	7	4	5	5	1	3	1	2	2	4	N	48	18	15	
132	A	B	F	15	2	5	C	7	3	3	3	3	2	2	2	4	2	2	2	5	3	Y	43	23	19	
133	A	B	F	15	4	5	C	3	3	2	4	2	4	3	3	2	1	1	1	4	1	N	34	15	11	
134	A	B	F	15	4	5	P	4	6	4	5	4	4	4	4	0	0	2	3	4	2	N	46	16	13	
135	A	B	F	16	1	5	C	5	5	0	6	5	4	4	5	2	3	3	0	5	3	Y	50	23	14	
136	A	B	F	16	4	5	C	4	5	5	2	4	3	4	4	4	3	2	4	2	3	Y	49	17	14	
137	A	B	F	16	1	5	C	6	5	7	7	4	5	6	2	0	5	4	5	0	3	Y	59	31	15	
138	A	B	F	16	1	5	C	6	5	0	5	2	4	4	2	0	3	0	0	2	0	U	33	13	12	
139	A	B	F	15	4	5	M	5	6	5	4	4	4	3	5	2	6	3	0	3	2	N	52	15	13	
140	A	B	F	15	2	5	M	7	5	5	5	5	5	5	4	5	3	2	4	5	5	Y	65	25	21	
141	A	B	F	15	1	5	P	6	2	2	4	3	1	1	1	1	1	1	4	4	0	N	31	15	11	
142	A	B	F	15	4	5	C	6	5	6	7	6	5	3	2	2	4	0	0	4	0	Y	50	17	16	
143	A	B	F	16	2	5	M	5	5	6	4	4	5	3	2	2	4	3	1	4	1	Y	49	17	16	
144	A	B	F	15	4	5	C	5	5	3	6	5	4	5	6	6	5	3	7	5	5	Y	70	28	20	
145	A	B	F	15	4	5	M	6	5	7	5	5	2	3	2	3	3	2	3	4	2	Y	52	25	21	
146	A	B	F	15	1	5	M	4	4	3	5	3	3	5	4	2	1	3	0	1	0	Y	38	20	19	
147	A	B	F	17	1	6	C	7	6	4	2	5	4	5	4	3	6	2	5	5	6	U	64	24	19	
148	A	B	F	17	1	6	P	4	3	1	1	3	2	1	1	0	1	0	1	1	1	Y	20	13	13	
149	A	B	F	18	4	7	C	7	5	5	4	5	4	3	2	6	5	1	5	6	0	Y	58	22	16	
150	A	B	F	17	4	7	C	6	5	6	7	4	6	5	3	5	4	5	2	4	3	N	65	23	20	
151	A	B	F	17	1	7	C	7	4	4	3	4	4	3	4	6	3	2	2	4	2	Y	52	19	15	
152	A	B	F	16	4	6	C	5	5	6	5	4	4	6	3	1	3	0	0	5	5	N	52	20	18	
153	A	B	M	17	2	6	C	6	3	5	3	5	5	5	3	2	0	0	0	0	0	Y	37	16	15	
154	A	A	F	14	2	3	C	4	3	2	3	4	2	0	0	1	4	1	3	4	1	N	32	12	10	
155	A	A	M	13	4	3	C	4	5	3	3	3	5	3	4	4	3	3	1	3	4	Y	48	20	14	
156	A	A	M	14	4	3	C	4	6	5	3	4	4	3	3	4	4	0	0	0	0	U	40	11	9	

Student Questionnaire Raw Data - full data set by ID number

ID	Sch	Str	Gen	Age	Inc	Frm	Rac	Grf	Pri	Lov	Jel	Emb	Fea	Ang	Sur	Cur	Dis	Con	Ang	Bor	Gui	Lrn	Tot	VoT	VoU	Com
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20				
157	A	A	M	13	4	3	C	5	7	3	4	4	8	4	4	0	3	3	1	4	2	Y	52	16	14	
158	A	A	F	13	4	3	C	5	4	3	3	4	8	3	3	2	4	3	5	4	3	U	54	18	13	
159	A	A	F	13	4	3	C	4	5	4	4	4	4	4	5	5	5	3	2	4	2	U	55	17	11	
160	A	A	F	14	4	3	C	5	2	4	4	2	4	2	2	0	4	3	3	4	3	N	42	14	12	
161	A	A	F	13	4	3	C	5	5	0	4	4	4	0	4	0	0	0	0	5	2	Y	33	12	12	
162	A	A	M	13	4	3	C	5	4	4	3	2	4	2	4	3	3	5	1	2	2	N	44	17	13	
163	A	A	M	14	4	3	C	6	6	5	5	5	5	2	3	0	4	0	4	3	0	Y	48	13	9	
164	A	A	M	14	4	3	C	4	3	3	3	2	5	2	0	0	1	0	1	4	3	U	31	11	11	
165	A	A	M	13	4	3	P	5	2	4	4	4	4	4	0	3	3	0	0	4	0	Y	37	13	11	
166	A	A	F	14	4	3	C	4	4	5	4	4	6	2	5	4	4	5	0	5	5	Y	57	18	15	
167	A	A	F	13	4	3	C	4	3	0	4	3	4	3	3	0	4	1	2	4	3	Y	38	10	9	
168	A	A	F	13	1	3	C	3	2	5	4	3	3	4	3	6	4	3	3	3	3	Y	49	31	24	
169	A	A	F	14	4	3	C	3	3	4	5	4	4	5	5	4	4	5	4	4	4	Y	58	17	16	
170	A	A	F	13	1	3	C	3	5	3	5	3	3	4	6	2	5	6	5	2	1	Y	53	22	19	
171	A	A	M	13	4	3	P	6	6	4	6	5	6	5	5	2	4	5	6	4	6	N	70	20	15	
172	A	A	M	14	4	3	C	4	4	1	3	4	3	0	2	2	0	2	1	3	2	Y	31	16	15	
173	A	A	M	13	4	3	P	9	11	10	7	5	8	8	6	3	4	4	5	3	3	U	86	35	28	
174	A	A	F	13	4	3	P	4	6	4	3	5	4	4	4	4	2	2	2	4	2	N	50	13	12	
175	A	A	F	13	4	3	M	4	3	4	4	2	2	4	2	2	2	2	3	4	2	Y	40	21	15	
176	A	A	F	14	2	3	C	5	6	3	3	3	4	2	3	2	4	0	0	1	2	N	38	12	10	
177	A	A	F	13	1	3	P	6	1	1	5	5	5	3	2	1	0	0	0	0	1	N	30	13	12	DIFFI TYP
178	A	A	F	14	4	3	C	4	4	4	4	3	3	0	2	0	2	2	3	4	2	Y	37	14	12	
179	A	A	F	13	4	3	C	5	2	3	4	6	4	6	5	5	4	2	0	3	3	N	52	13	13	
180	A	A	F	15	4	5	P	4	2	2	2	2	3	3	1	3	3	2	4	4	3	Y	38	18	12	
181	A	A	M	15	2	5	C	3	5	3	4	6	4	4	6	5	5	2	2	4	3	Y	56	20	15	
182	A	A	M	16	2	5	C	0	3	3	3	3	2	2	3	4	1	4	2	4	2	N	36	11	11	
183	A	A	F	16	1	5	C	6	6	7	7	4	7	7	4	5	5	3	5	4	5	Y	75	36	26	
184	A	A	F	15	4	5	C	6	8	5	4	4	4	4	3	1	3	3	4	4	2	Y	55	16	15	
185	A	A	M	16	1	5	C	6	5	6	4	4	6	4	5	3	4	4	3	5	5	Y	64	21	18	
186	A	A	F	15	4	5	C	5	5	5	5	6	4	3	5	5	5	4	4	4	5	Y	65	33	26	
187	A	A	F	15	2	5	C	6	8	9	7	6	5	12	8	9	5	8	5	9	5	Y	102	38	33	

Student Questionnaire Raw Data - full data set by ID number

ID	Sch	Str	Gen	Age	Inc	Frm	Rac	Grf	Pri	Lov	Jel	Emb	Fea	Ang	Sur	Cur	Dis	Con	Ang	Bor	Gui	Lrn	Tot	VoT	VoU	Com
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20				
188	A	A	F	15	1	5	C	6	6	8	5	4	4	6	5	5	5	4	6	4	5	Y	73	30	25	
189	A	A	F	16	4	5	C	4	5	5	4	4	4	0	3	2	3	5	3	3	4	Y	49	15	14	
190	A	A	F	15	2	5	C	4	6	5	6	5	5	2	5	4	4	3	5	4	5	Y	63	19	19	
191	A	A	F	15	4	5	C	5	6	8	6	5	5	4	5	6	3	4	5	3	4	Y	69	30	27	
192	A	A	F	15	4	5	C	6	4	7	4	3	3	9	6	7	5	4	6	2	5	Y	71	29	23	
193	A	A	M	15	4	5	P	3	3	2	4	2	4	2	0	1	1	3	0	4	4	N	33	14	12	
194	A	A	M	15	4	5	C	6	4	2	4	4	2	2	4	4	4	5	2	1	3	Y	47	21	15	
195	A	A	M	16	4	5	C	8	6	4	7	7	6	8	6	7	6	6	5	8	5	U	89	33	14	
196	A	A	M	15	4	5	C	4	5	3	4	3	6	4	4	4	3	3	3	4	4	Y	54	17	14	
197	A	A	M	16	4	5	C	7	3	5	6	6	7	7	5	5	6	6	4	1	3	Y	71	23	19	
198	A	A	M	16	4	5	M	6	7	7	8	5	5	4	11	5	6	5	5	5	3	Y	82	28	20	
199	A	A	F	16	4	5	C	5	4	3	4	3	5	4	0	2	3	4	4	3	7	Y	51	16	11	
200	A	A	F	15	1	5	C	5	4	4	3	4	4	2	4	3	3	6	4	3	4	N	53	20	16	
201	A	A	F	16	1	5	C	4	5	6	5	3	5	2	4	4	4	3	4	4	2	Y	55	20	16	
202	A	A	F	15	4	5	C	3	6	4	4	5	2	4	3	4	2	1	5	4	2	Y	49	19	12	
203	A	A	F	16	4	5	C	6	9	6	4	2	4	4	4	5	4	4	5	3	4	Y	64	19	13	
204	A	A	F	15	4	5	C	6	4	6	9	4	4	5	7	5	3	5	5	6	6	Y	75	22	18	
205	A	A	F	15	4	5	C	7	6	5	6	7	6	8	6	5	7	7	9	6	8	Y	93	37	25	
206	A	A	F	16	2	5	C	5	6	4	6	4	5	6	5	4	4	4	5	2	6	Y	66	20	17	
207	A	A	F	15	2	5	C	5	4	5	5	5	4	4	4	4	1	5	4	4	5	N	59	25	24	
208	A	A	F	15	4	5	C	5	4	6	5	2	7	1	4	3	1	3	1	2	2	N	46	18	17	
209	A	A	F	15	2	5	C	4	3	5	3	4	4	5	4	4	4	5	4	4	4	N	57	19	16	
210	A	B	F	17	4	7	C	5	5	2	5	5	5	4	2	5	3	5	3	4	4	Y	57	18	15	
211	A	B	M	18	3	7	C	5	2	4	6	5	4	4	0	2	0	1	2	4	4	Y	43	11	10	
212	A	B	F	18	4	7	C	3	1	2	3	5	4	4	3	2	2	1	0	2	0	Y	32	10	9	
213	A	B	F	17	4	7	C	3	4	4	5	4	4	4	4	4	4	4	4	1	2	Y	51	16	13	
214	S	A	M	13	2	3	C	5	6	0	5	5	4	4	3	4	2	3	4	3	4	U	52	16	11	
215	S	A	M	13	3	3	C	2	2	4	2	2	2	3	3	4	2	2	1	2	1	Y	32	16	15	
216	S	A	M	14	4	3	C	2	2	0	4	2	4	2	5	0	0	2	1	2	2	Y	28	10	10	
217	S	A	M	13	4	3	C	2	1	2	1	2	2	1	1	0	2	0	1	2	1	Y	18	11	10	
218	S	A	M	14	3	3	C	0	2	0	3	4	2	0	1	0	1	0	3	0	0	Y	16	6	5	

Student Questionnaire Raw Data - full data set by ID number

ID	Sch	Str	Gen	Age	Inc	Frm	Rac	Grf	Pri	Lov	Jel	Emb	Fea	Ang	Sur	Cur	Dis	Con	Ang	Bor	Gui	Lrn	Tot	VoT	VoU	Com
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20				
219	S	A	M	13	3	3	C	5	6	0	4	2	4	4	3	0	3	2	4	4	1	U	42	15	11	
220	S	A	M	13	3	3	C	5	6	0	4	4	4	0	4	3	5	0	4	2	2	Y	43	18	13	
221	S	A	M	13	2	3	C	3	5	0	4	2	4	0	0	0	0	2	3	4	0	Y	27	9	9	
222	S	A	M	13	2	3	C	6	5	2	3	4	5	2	5	0	2	2	4	4	5	N	49	16	16	
223	S	A	M	14	3	3	C	3	1	0	1	2	0	0	1	1	2	1	1	2	2	Y	17	14	11	
224	S	A	M	13	3	3	C	2	3	0	1	4	1	2	0	1	1	1	0	0	0	Y	16	8	6	
225	S	A	M	14	3	3	C	2	4	5	2	4	4	3	4	4	3	4	3	3	5	Y	50	17	15	
226	S	A	M	13	3	3	C	4	2	1	1	2	2	0	1	2	2	1	1	1	1	N	21	13	11	
227	S	A	M	13	4	3	C	3	1	2	5	2	2	0	2	1	1	2	1	2	0	N	24	12	12	
228	S	A	M	13	4	3	A	0	2	4	1	3	1	0	2	4	1	0	0	4	2	N	24	13	10	
229	S	A	M	13	3	3	C	3	4	4	4	3	4	0	3	1	0	0	3	4	0	Y	33	14	12	
230	S	A	M	14	3	3	C	1	3	0	1	0	0	1	1	0	0	1	1	1	1	Y	11	4	4	
231	S	A	M	14	4	3	C	3	3	0	1	2	2	2	4	1	1	1	2	1	2	Y	25	12	12	
232	S	A	M	14	2	3	C	5	4	6	3	5	3	4	4	2	3	3	0	5	2	N	49	15	12	
233	S	A	M	14	2	3	C	3	3	0	0	4	5	4	5	0	4	4	4	3	3	N	42	13	11	
234	S	A	M	13	4	3	C	4	3	4	4	2	4	3	4	4	2	4	4	2	4	N	48	25	17	
235	S	A	M	14	4	3	C	0	7	0	5	2	1	4	2	0	0	1	0	1	0	Y	23	7	6	
236	S	A	M	14	3	3	C	4	4	1	3	4	4	5	5	4	3	2	2	5	4	Y	50	14	11	
237	S	A	M	13	3	3	C	3	6	3	4	5	4	2	2	5	1	4	1	4	2	Y	46	15	14	
238	S	A	M	13	3	3	C	4	2	5	1	2	2	2	3	2	4	3	4	2	2	N	38	20	13	
239	S	A	M	13	3	3	C	2	3	1	2	5	4	3	6	4	4	5	4	3	2	Y	48	14	13	
240	S	A	M	14	3	3	C	5	5	4	7	7	5	3	3	5	3	2	4	3	2	Y	58	28	23	
241	S	B	M	15	3	5	C	4	4	3	4	2	4	3	2	4	1	3	4	4	1	N	43	12	10	
242	S	B	M	15	4	5	C	4	2	3	1	2	2	1	3	0	1	1	0	3	0	N	23	10	6	
243	S	B	M	16	2	5	C	3	3	2	4	4	3	4	2	2	3	4	4	4	3	Y	45	13	10	
244	S	B	M	16	3	5	P	0	1	0	1	0	0	0	0	0	0	0	0	0	0	N	2	1	1	LIKELY NC
245	S	B	M	15	1	5	C	2	1	1	0	2	0	2	0	0	2	1	0	0	0	U	11	8	7	
246	S	B	M	15	4	5	M	4	3	4	3	2	4	3	4	2	2	1	0	4	0	N	36	12	11	
247	S	B	M	15	4	5	C	2	0	0	0	2	0	0	0	0	0	0	0	0	0	U	4	2	2	
248	S	B	M	15	3	5	C	2	0	0	2	2	2	0	0	0	0	0	0	0	0	N	8	5	5	LIKELY INC
249	S	B	M	16	4	5	C	4	1	2	4	3	4	0	0	0	0	0	0	0	0	Y	18	5	5	

Student Questionnaire Raw Data - full data set by ID number

ID	Sch	Str	Gen	Age	Inc	Frm	Rac	Grf	Pri	Lov	Jel	Emb	Fea	Ang	Sur	Cur	Dis	Con	Ang	Bor	Gui	Lrn	Tot	VoT	VoU	Com
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20				
250	S	B	M	17	4	5	C	3	3	0	1	0	2	0	0	0	0	0	0	0	0	N	9	2	2	
251	S	B	M	15	4	5	C	3	4	1	2	2	4	4	0	1	0	1	3	2	1	N	28	14	11	
252	S	B	M	15	4	5	C	6	7	6	4	0	4	2	3	0	3	2	4	2	0	Y	43	21	19	
253	S	B	M	15	3	5	P	4	1	3	4	3	3	2	2	0	3	0	2	2	1	Y	30	25	15	
254	S	B	M	15	2	5	C	3	2	0	3	2	4	0	0	0	0	1	0	0	0	N	15	6	6	
255	S	B	M	16	4	5	C	4	1	3	3	2	2	2	0	0	0	1	0	2	0	N	20	11	11	
256	S	B	M	16	3	5	C	3	5	3	1	3	1	2	2	0	1	0	0	2	0	Y	23	10	9	
257	S	B	M	16	3	5	C	3	2	0	3	2	0	0	0	0	0	0	1	1	0	N	12	4	4	
258	S	B	M	15	3	5	C	3	2	4	4	4	2	4	4	4	4	1	2	3	2	Y	43	12	10	
259	S	B	M	16	4	5	C	4	4	0	4	2	4	1	5	0	0	3	0	4	1	N	32	8	8	
260	S	B	M	16	3	5	C	5	4	2	2	2	3	2	0	0	0	0	0	0	0	N	20	8	8	
270	S	B	M	16	4	5	C	6	5	4	3	2	2	2	3	0	2	2	0	2	2	N	35	12	8	261-269 D
271	S	B	M	16	2	5	C	3	5	0	4	3	2	4	2	3	3	1	1	2	0	Y	33	10	9	
272	S	M	M	17	3	7	C	4	2	6	3	2	4	5	2	5	3	0	3	4	3	Y	46	17	13	
273	S	M	M	17	3	7	C	5	3	6	6	5	5	3	4	5	3	4	3	2	1	N	55	25	20	
274	S	M	M	18	3	7	A	2	3	2	4	0	0	0	2	5	0	2	2	0	0	Y	22	8	8	
275	S	M	M	17	3	7	C	4	4	4	4	4	4	4	6	2	0	2	4	4	1	U	47	14	11	
276	S	M	M	18	3	7	C	6	5	6	6	2	5	4	7	4	6	5	6	6	6	Y	74	29	22	
277	S	M	M	18	2	7	C	5	6	4	4	4	2	4	0	4	2	0	0	2	3	U	40	17	15	
278	S	M	M	18	3	7	P	2	4	4	3	2	0	4	0	5	2	3	1	0	0	N	30	14	13	
279	S	M	M	17	3	7	C	4	3	4	3	4	5	4	6	3	3	5	2	5	3	Y	54	25	15	
280	S	M	M	17	2	7	C	4	5	5	5	3	4	2	3	5	5	5	2	4	2	Y	54	23	19	
281	S	M	M	17	2	7	C	4	6	5	5	5	4	4	5	5	3	3	4	5	5	Y	63	22	17	
282	S	M	M	17	1	7	C	4	4	0	5	3	3	3	5	0	3	3	5	4	4	Y	46	17	12	
283	S	M	M	17	3	7	C	6	5	7	3	4	6	3	5	6	6	4	5	2	3	Y	65	20	13	
284	S	M	M	17	2	7	P	3	4	0	3	5	7	3	4	6	2	1	5	3	4	Y	50	21	18	
285	S	M	M	18	3	7	C	5	3	6	6	5	4	4	8	6	3	3	5	4	4	Y	66	21	15	
286	S	M	M	17	2	7	C	6	5	4	5	5	6	1	6	6	3	5	2	6	4	Y	64	23	22	
287	S	M	M	17	2	7	C	8	3	4	7	3	4	5	3	6	4	4	6	4	3	Y	64	26	20	
288	S	M	M	18	4	7	A	2	3	5	3	4	6	3	5	5	3	5	5	3	2	Y	54	22	18	ESOL
289	S	M	M	18	1	7	C	8	8	10	9	8	8	4	3	8	9	5	4	2	2	Y	88	21	25	

Student Questionnaire Raw Data - full data set by ID number

ID	Sch	Str	Gen	Age	Inc	Frm	Rac	Grf	Pri	Lov	Jel	Emb	Fea	Ang	Sur	Cur	Dis	Con	Ang	Bor	Gui	Lrn	Tot	VoT	VoU	Com
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20				
290	B	M	M	14	3	3	C	3	2	1	1	0	2	1	0	0	0	1	1	1	0	Y	13	4	4	
291	B	M	M	14	3	3	C	5	0	0	3	2	2	3	2	1	2	1	1	2	0	Y	24	11	11	
292	B	M	M	13	4	3	C	2	2	3	4	3	2	2	2	3	0	0	0	0	1	Y	24	13	11	
293	B	M	M	14	3	3	C	2	0	4	3	3	3	2	3	4	4	2	2	2	2	Y	36	16	15	
294	B	M	M	13	3	3	C	4	4	2	3	2	2	1	1	0	0	1	2	2	2	N	26	5	5	
295	B	M	M	13	3	3	C	1	1	2	2	0	2	2	2	3	3	2	2	1	1	Y	24	16	12	
296	B	M	M	14	3	3	C	4	2	2	3	2	2	2	3	1	3	2	2	4	1	U	33	17	15	
297	B	M	M	13	3	3	O	1	1	1	3	4	2	2	1	1	1	1	2	0	0	Y	20	9	7	
298	B	M	M	13	2	3	C	4	4	4	4	2	4	2	3	0	3	3	4	4	2	Y	43	15	10	
299	B	M	M	14	3	3	C	0	0	0	1	0	1	2	0	0	0	1	3	2	0	N	10	5	4	
300	B	M	M	14	3	3	C	4	4	4	4	2	1	1	2	1	0	2	0	1	0	Y	26	10	9	
301	B	M	M	13	2	3	C	4	2	2	2	2	2	2	1	3	1	1	3	1	0	N	26	15	13	
302	B	M	M	14	2	3	C	4	4	0	4	2	3	2	4	1	3	1	3	2	3	Y	36	17	15	
303	B	M	M	13	4	3	C	3	3	2	3	4	4	4	4	4	2	0	3	3	1	Y	40	12	12	
304	B	M	M	13	2	3	C	5	4	1	1	0	2	2	2	3	1	0	0	0	1	Y	22	6	6	
305	B	M	M	14	2	3	M	5	6	0	4	4	4	3	5	0	5	3	2	4	0	N	45	16	14	
306	B	M	M	14	3	3	C	5	3	6	4	5	5	4	2	3	3	1	1	2	2	Y	46	14	13	
307	B	M	M	13	3	3	C	4	2	0	2	2	2	4	3	3	1	2	0	0	0	N	25	14	10	
308	B	M	M	14	2	3	C	4	4	4	3	4	4	6	1	4	4	3	4	1	1	N	47	13	12	
309	B	M	M	14	2	3	C	4	3	4	4	3	4	4	2	2	1	1	2	2	3	Y	39	15	8	
310	B	M	M	14	2	3	A	3	1	2	1	2	2	0	2	0	0	0	0	0	0	U	13	7	5	ESOL
311	B	M	M	13	3	3	C	5	7	4	3	5	0	0	0	1	0	3	0	0	0	U	28	17	11	FACCETIO
312	B	M	M	14	1	3	A	3	3	0	3	4	0	0	1	4	1	1	4	4	2	N	30	9	7	ESOL
313	B	M	M	14	2	3	C	5	6	3	4	2	4	4	0	4	1	3	4	4	4	Y	48	18	16	
341	B	M	M	13	3	3	C	5	4	0	3	5	4	5	0	4	4	3	3	3	2	Y	45	15	12	
315	B	M	M	13	3	3	C	6	4	6	4	3	4	2	4	1	2	2	1	3	1	Y	43	16	14	
316	B	M	M	14	4	3	A	6	6	0	2	2	0	0	6	4	0	0	4	2	2	Y	34	14	12	ESOL
317	B	M	M	17	2	7	C	2	1	4	3	2	4	3	0	1	6	6	6	0	0	N	38	15	13	
318	B	M	M	15	2	5	C	4	5	0	5	0	9	3	6	0	0	0	0	6	5	Y	43	18	14	
319	B	M	M	16	3	5	C	4	4	4	4	4	4	4	4	0	1	4	4	4	4	Y	49	13	10	
320	B	M	M	16	4	6	P	5	4	4	3	4	4	4	2	2	3	2	3	4	4	Y	48	16	13	

Student Questionnaire Raw Data - full data set by ID number

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			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20				
321	B	M	M	17	2	6	C	7	5	6	6	3	5	5	4	5	4	4	2	4	1	Y	61	29	23	
322	B	M	M	16	3	5	C	5	3	4	4	4	4	2	6	6	3	2	4	4	4	U	55	14	12	
323	B	M	M	15	3	5	C	6	5	4	5	3	4	4	5	6	5	5	4	5	6	Y	67	24	19	
324	B	M	M	15	2	5	C	4	6	5	6	6	3	4	4	3	4	3	3	4	2	U	57	22	17	
325	B	M	M	15	1	5	C	3	4	3	5	3	1	2	3	4	2	3	2	4	6	N	45	21	16	
326	B	M	M	16	2	5	C	6	7	5	4	5	4	4	5	5	5	4	5	4	3	N	66	21	17	
327	B	M	M	15	4	5	C	6	8	6	5	5	4	3	7	0	5	2	5	4	4	Y	64	22	19	
328	B	M	M	15	4	5	C	5	6	5	3	4	3	0	6	5	4	6	4	4	3	Y	58	19	15	
329	B	M	M	15	4	5	C	3	2	2	4	4	4	0	2	1	3	1	2	2	3	Y	33	13	11	
330	B	M	M	16	3	5	C	4	4	2	3	2	2	0	2	4	0	1	1	1	0	N	26	16	11	
331	B	M	M	16	3	5	C	7	7	7	5	6	5	2	5	6	4	6	1	5	4	N	70	29	26	
332	B	M	M	15	3	5	C	5	5	1	6	3	4	3	0	5	6	3	5	4	7	N	57	19	18	
333	B	M	M	16	3	5	C	9	7	5	4	5	4	4	4	6	3	2	4	4	4	Y	65	28	23	
334	B	M	M	16	2	5	C	3	3	3	1	4	4	3	3	1	3	4	3	2	2	Y	39	17	12	
335	B	M	M	15	3	5	M	5	4	7	4	2	5	4	4	3	4	4	5	4	6	U	61	20	16	
336	B	M	M	16	3	5	C	5	1	6	5	5	5	3	2	4	3	5	1	5	2	U	52	21	19	
337	B	M	M	15	2	5	M	3	3	3	2	2	3	2	2	3	1	2	1	3	3	Y	33	18	15	
338	B	M	M	16	4	5	C	5	5	7	7	4	6	4	6	2	3	3	2	2	2	Y	58	21	17	
339	B	M	M	15	2	5	C	5	5	5	5	5	6	4	4	5	4	4	6	6	4	Y	68	31	20	
340	B	M	M	16	2	5	C	8	7	8	9	6	4	4	7	6	6	5	6	2	5	Y	83	32	28	
341	B	M	M	15	2	5	C	6	6	6	4	5	2	2	3	1	2	2	5	1	2	U	47	15	12	
342	B	M	M	15	3	5	C	4	0	5	5	3	4	2	3	3	4	2	3	3	2	Y	43	12	12	
343	B	M	M	15	3	5	C	5	4	5	3	4	4	3	4	2	3	2	1	4	2	U	46	13	11	
344	B	M	M	16	4	5	C	5	2	5	4	5	4	6	5	3	5	2	3	2	3	Y	54	25	17	
345	B	M	M	16	3	5	C	6	5	6	7	8	5	7	6	7	3	6	5	5	3	Y	79	27	22	
346	B	M	M	16	3	6	C	2	3	3	4	3	3	3	1	2	3	3	4	3	2	Y	39	11	8	
347	B	M	M	16	3	6	C	3	4	4	3	5	4	7	4	4	2	3	6	3	3	Y	55	28	17	
348	B	M	M	17	3	6	C	6	5	4	4	3	3	2	4	3	3	4	3	5	3	Y	52	16	13	
349	B	M	M	16	2	6	C	3	2	2	4	1	2	4	3	3	3	3	3	4	3	Y	40	13	9	
350	B	M	M	16	3	6	C	5	7	5	3	6	4	4	6	5	5	3	4	4	3	Y	64	18	15	
351	B	M	M	16	3	6	C	7	6	5	5	4	2	6	3	5	3	4	2	4	2	Y	58	24	21	

Student Questionnaire Raw Data - full data set by ID number

ID	Sch	Str	Gen	Age	Inc	Frm	Rac	Grf	Pri	Lov	Jel	Emb	Fea	Ang	Sur	Cur	Dis	Con	Ang	Bor	Gui	Lrn	Tot	VoT	VoU	Com
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20				
352	B	M	M	17	3	6	C	5	3	3	3	4	5	4	3	2	3	4	4	3	4	N	50	13	11	
353	B	M	M	16	3	6	C	4	3	2	5	2	5	5	3	1	3	3	4	4	4	N	48	17	12	
354	B	M	M	17	3	6	C	5	4	4	5	6	3	4	0	2	2	2	3	4	2	Y	46	15	14	
355	B	M	M	16	4	6	C	4	3	5	2	3	4	1	4	3	4	4	5	3	4	Y	49	18	17	
356	B	M	M	16	4	6	C	6	8	6	5	4	5	1	7	2	5	2	2	3	1	Y	57	15	15	
357	B	M	M	16	3	6	C	3	6	5	7	6	6	5	7	4	4	5	6	3	5	Y	72	29	20	
358	B	M	M	16	2	6	C	6	8	7	6	5	5	4	4	6	3	3	5	2	5	N	69	27	26	
359	B	M	M	16	3	6	C	5	5	4	4	4	5	5	4	4	3	2	4	2	3	Y	54	27	20	
360	B	M	M	16	2	6	C	2	4	3	4	2	3	4	5	2	3	4	2	3	2	Y	43	14	13	
361	B	M	M	16	4	6	C	3	3	2	1	2	1	0	1	1	4	1	2	2	2	Y	25	12	12	
362	B	M	M	16	3	6	C	5	6	6	5	5	4	4	3	4	4	2	4	0	2	Y	54	17	14	
363	B	M	M	17	4	6	C	5	5	4	4	5	6	4	7	3	5	3	3	3	3	Y	60	23	18	
364	B	M	M	16	3	6	C	4	4	3	2	3	4	2	4	3	1	1	1	2	1	Y	35	20	18	
365	B	M	M	17	3	6	C	4	6	3	3	2	2	2	3	4	2	1	3	0	0	Y	35	9	9	
366	B	M	M	17	3	7	C	6	5	7	5	6	3	5	5	5	4	0	0	4	4	U	59	26	20	
367	B	M	M	17	3	7	C	5	5	6	6	5	8	6	5	4	4	5	5	2	3	N	69	24	18	
368	B	M	M	18	3	7	C	7	8	6	6	4	5	5	3	2	5	5	2	4	4	Y	66	26	23	
369	B	M	M	18	2	7	C	5	5	5	5	5	4	3	4	3	2	6	2	4	3	Y	56	19	15	
370	B	M	M	17	1	7	C	6	6	5	5	6	6	6	4	5	3	4	4	4	5	Y	69	28	20	
371	B	M	M	17	3	7	C	6	8	3	5	4	4	5	7	6	2	5	5	4	3	Y	67	25	23	
372	B	M	M	18	3	7	C	4	5	1	4	4	4	2	4	6	2	5	5	4	5	Y	55	14	14	
373	B	M	M	17	2	7	C	5	5	4	5	5	2	7	3	3	5	3	2	2	2	Y	53	15	11	
374	B	M	M	17	3	7	C	7	3	5	4	5	4	6	3	3	3	4	4	4	4	Y	59	14	12	
375	B	M	M	17	4	6	C	3	1	4	2	2	1	2	1	2	1	1	2	2	2	N	26	15	15	
376	B	M	M	18	3	7	C	6	5	7	6	4	6	6	9	5	7	7	8	4	5	Y	85	30	26	
377	B	M	M	18	3	7	C	3	5	5	4	3	4	3	5	5	4	4	6	4	3	N	58	18	18	

APPENDIX 6

Scenarios Fold out Questionnaire

Note: The protagonist is shown in italics

6) A 60 year old *woman*'s husband died a year ago. They were very close and loved each other very much.

7) An *athlete* has just won her first international sporting event. As she receives her gold medal.

8) A *man and a woman* are walking on the beach together holding hands.

9) A five year old *boy* watches his mother cuddle his cute 18 month old sister. She tells him to go to his room and stop taking his sister's toys.

10) A *public speaker* is standing in front of a large audience when he notices that his zip is open.

11) A 9 year old *boy* is running away from his father who is swinging a jug cord over his head and screaming at him?

12) And what do you think the *father* in number 11 (above) is feeling and why?

13) A *teenage girl* is daydreaming in a hammock when she hears the loudest bang she has ever heard.

14) A 12 year old *boy* hears adults talking about sex in the other room. He sits just around the corner to hear what they are saying?

15) A *mother* finds her baby rubbing the smelly contents of its diaper all over the crib.

16) A principal tells an 18 year old *boy* to tidy up his clothes or he'll contact his parents. The boy makes a rude gesture toward the school principal turns his back and swaggers away.

17) And what do you think the *principal* in number 16 (above) is feeling and why?

18) A *woman* is listening to a man tell her the same long winded story for the tenth time.

19) A mother catches a 9 year old *boy* doing something he knows he is not supposed to do.